An Exploration of the Impact of Ontario Integrated Secondary Programs Through the Perceptions of their Graduates

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Abstract

The purpose of this study was to investigate the impact of participating in an integrated program at the secondary level on students' lives based on their postsecondary perceptions. A basic interpretive qualitative design was employed in this study. Ten semistructured interviews were conducted with graduates of integrated program as the means of data collection. It was found that the integrated programs accomplished objectives in close alignment with the mandated curriculum expectations regarding integrated programs. Some of the most powerful impacts related to students' learning skills, such as collaboration and social skills, and how to create as well as participate in community. A strong connection between participating in integrated programs and vocational guidance was also identified. The results led to the recommendation that integrated programs be explored as a platform for delivering 21st century education as they closely paralleled the objectives prescribed by a number of authors who detailed the role of education in the 21st century.

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CHAPTER ONE: INTRODUCTION

An Ontario school board where I have previous experience offers a variety of programs that employ integrated curriculum at the secondary level. These programs follow the curriculum model delineated in the *Ontario Curriculum Grades 11 and 12: Interdisciplinary Studies* (Ministry of Education, 2002) document. Students in these integrated programs earn three or four credits and remain in a consistent group for a semester and are guided by one or two teachers to pursue learning related to a particular field; some examples include: animation, music recording, baking, fashion, and technology. Under Drake's (2007) continuum of integration, most of the programs in this board would be considered interdisciplinary as they made "explicit connections across the subject areas" and revolved around a common theme, issue, or problem emphasizing interdisciplinary concepts or skills across subjects rather than within them (p. 36).

During my teacher education program, I completed a placement in one of these programs and throughout my practicum I took note that students in the program seemed more eager and enthusiastic to learn than in any other classroom in which I had participated. The school board's description of this program is paraphrased as follows:

> Students will explore the influence of human activity on the environment, both locally and globally. This program places emphasis on taking action in the local community and supporting the development of stewardship in schools. The goal of this program is to inspire action oriented leaders who are dedicated to working collaboratively toward a sustainable future.

The immediate impact an integrated approach seemed to have on student engagement was inspiring, but after spending a month with the students I realized that the seeds of

more lasting impacts also appeared to have been planted. Several students spoke of altering their postsecondary choices because of participating in the integrated course and of how participation in the course impacted some of their future goals. Hearing this sort of feedback from students, I decided to speak to some of my friends from high school and from my teacher education program who had participated in integrated programs regarding their experiences. Each person I spoke to had very detailed memories regarding their participation in integrated programs and many made direct, unprompted correlations to the program's impact on their postsecondary choices and ambitions. Such consistent and positive feedback regarding the impact of participating in integrated programing moved me to pursue a more in-depth understanding of the impact of curriculum integration on students' lives. In this thesis study, I sought out and interviewed students who had graduated from high school after participating in an integrated program that conformed to the *Ontario Curriculum Grades 11 and 12 Interdisciplinary Studies* (MOE, 2002) document in order to discover what, if any, impact their participation in integrated programing had on their lives after high school.

Background to the Problem

As early as 1938, John Dewey called for educational reform such that subjects would no longer be learned in isolation from one another. Dewey's push for educators to move away from a disciplinary model and the reforms of progressive educators during the 1920s and 1930s are cited as being at the heart of most curriculum integration initiatives (Applebee, Alder, & Flihan, 2007; Lake, 2000). This progressive movement was supported by the evidence gathered from Aikin's (1942) comprehensive 8-year

study, sponsored by the Progressive Educators Association, which made a strong case for the merits of curriculum integration (Applebee et al., 2007).

Integrated or interdisciplinary curriculum is not a new approach to teaching, but it has been a difficult phenomenon to study as a uniform definition has yet to be established (Drake 2007, Lake, 2000). Many prominent educators of the last century, such as Gordon Vars, Susan Drake, and James Beane have endorsed integrated curriculum, however, as Czerniak, Weber, Sandmann, and Ahern (1999) pointed out, educators have qualified their integrated approaches differently using a wide range of unstandardized terms.

In addition to the lack of a universal understanding of integrated curriculum, there is also a lack of empirical research (Applebee et al., 2007; Brewer, 2002; Czerniak et al., 1999; Lake, 2000; Meier, 1998; Orillion, 2009). One factor which may have contributed to the lack of research on integrated programs is inconsistent support from government. Clausen and Drake (2010) outlined some of the obstacles that have hindered the establishment of long-standing integrated programs in Ontario: "the provincial government has repeatedly attempted to introduce such reforms as integrated units, harmonized objectives, and open-concept, student-centred pods, only to reverse course due to economic setbacks or popular backlashes" (p. 69).

It would seem that integrated programing has been sparse for some time; 12 years earlier, Meier (1998) espoused the benefits of integrated curriculum and questioned why so few programs employ the approach:

> Once students leave school, they must be able to gather a variety of information and weave it together logically to make sense of situations and make informed

> decisions. Yet with all these concerns and calls for connections, integration is still not commonplace in schools. Are the problems with integration so massive they cannot be overcome? (p. 439)

Meier concluded that “Widespread evidence that integration will produce the desired effects does not exist" (p. 439).

Regarding the impact of participating in integrated programming on students, author after author over the last 2 decades called for further research to be conducted. For example, George (1996, as cited in Czerniak et al., 1999) listed a number of claims about an integrated curriculum that are not supported by research, some of which included promoting problem solving, promoting learning in greater depth, increasing retention of information, increasing teacher engagement, increasing achievement, and enhancing the social environment of the classroom. More recently, Orillion (2009) came to a similar conclusion regarding the assumptions about the impact of integrated curriculum compared to the evidence that supports those assumptions:

> The assumption is that [interdisciplinary approaches] will bring coherence to the curriculum and foster academic skills (e.g., critical thinking) through the process of integrating different disciplinary perspectives. However, few researchers have systematically studied interdisciplinary curriculum. We do not know if interdisciplinary courses promote these outcomes, nor do we know the mechanisms by which these outcomes are—or are not—accomplished. (p. 1)

Lake (2000) studied a specific aspect of integrated curriculum, but she too came to the conclusion that “there is a small body of research related to the impact of an integrated curriculum on student attitudes” (p. 10).

Czerniak et al. (1999) stated that “most of the literature on curriculum integration could be characterized as ‘testimonials’" (p. 423). In a review of literature based on 479 articles, Brewer (2002) provided strong evidence for the need for further empirical study of the impact of integrated curriculum. Brewer found that “integrated programs and practices are the focus of most of the literature" (p. 34) and, furthermore, “82 percent of the literature reported on programs, 16 percent advanced a theory, and less than 2 percent focused on research” (p. 35). Brewer concluded that “we in education tend to do and promote what we feel is best without investigating results or ramifications” (p. 35), and that “there is also a clear need for more research on intrinsic and integrated approaches and their relationships (p. 36)”.

It would seem that Brewer’s (2002) conclusion was correct; Czerniak et al. (1999) discussed that integrated curriculum has gained a great deal of acceptance among educators. Many educators provide testimonials about the effectiveness of units they teach, and many professional organizations stress integration across the curriculum, but, according to Czerniak et al., “despite the call for integrated curriculum, there is little existing empirical research supporting the notion that it is more effective than traditional, discipline-based curriculum" (p. 422).

There is an identified need for research that focuses on the experience of students who have been involved in programs that employ curriculum integration and the impact their participation has on their lives. This thesis sought to meet the need for such a study by exploring the impact of participating in an integrated secondary level program on students’ lives based on their perceptions after graduating.

Problem Statement

The purpose of this study was to investigate the impact of participating in an integrated program at the secondary level on students' lives based on their postsecondary perceptions. This study is needed because there is a call for greater research in the field of curriculum integration (Applebee et al., 2007; Brewer, 2002; Czerniak et al., 1999; Lake, 2000; Meier, 1998; Orillion, 2009). Integrative programming has been widely used in one form or another, yet little evidence has been collected to explore the impact of this educational approach on students' lives (Meier, 1998; Wineburg & Grossman 2000). The existing literature regarding the impact of integrated curriculum on students warrants further research as it alludes to the potential for positive student outcomes in terms of academics (Applebee et al., 2007; Beichner et al., 1999; Caudill, 2009; McMath, Roberts, Wallace, & Chi, 2010; Romance & Vitale, 2012), pedagogy and engagement (Beane, 1991; Drake, 2007; Dutt-Doner & Wilmer, 2000; Kervin & Mantei, 2010; Tews, 2011), and learning in the 21st century (Johnston, Smith, Smythe, &Varon, 2009; Lake, 2000; Lyngard,2004; Ministry of Education, 2002; Ross & Hogaboam-Gray, 1996; Thomas, Hassaram, Reith, Raghavan, Kinzer, & Mulloy, 2012).

Two research questions guided the processes of this study:

1. What is the impact of participating in integrated curriculum on students' lives?
2. How do the experiences of participants compare to the mandated curriculum expectations of integrated programs in Ontario?

Rationale and Importance of the Study

Integrated programming has been widely used in one form or another, yet little evidence has been collected to explore the impact of this educational approach on students' lives (Meier, 1998; Wineburg & Grossman 2000). Wonacott (2002) stated that "as a general rule, studies and evaluations have found positive associations between participation in approaches involving [integrated curriculum] and students' educational outcomes at both the secondary and postsecondary levels" (p. 2). He concluded that although "positive effects have been reported throughout the whole range of high school experience, from attendance to course taking to graduation, whereas too little time has passed for the longer-term effects in postsecondary education to be investigated" (p. 2).

Drake (2007) wrote that using integrated curriculum "teachers can be creative. They can set curriculum in a relevant context. They can craft it around the needs of students. They can even ask for students' input into what students want to learn" (p. 25). Aikin (1942) expressed similar sentiments in his support of the importance of democratic curriculum, which is an espoused component of many integrated curricula. For example, Beane (1995) claimed the process of integrating student queries into the curriculum is vital when employing integrated curriculum (p. 619). Kervin and Mantei (2010) present a case for the use of integration whereby one subject that may be dry when taught in a disciplinary context, can facilitate engaging and creative inquiry when integrated with another, while Dutt-Doner and Wilmer (2000) argue that student engagement is enhanced with the use of curriculum integration. Given the number of strong endorsements of the positive impacts associated with curriculum integration further study is justified.

The 21st century has also given rise to a number of compelling reasons to explore the impact of curriculum integration. According to Lyngard (2004), teachers of the new millennium feel more stressed for time than ever before and they are being asked to accomplish more with less time. For example, "integration [could] focus student attention on the most important things to learn. These essentials consist of outcomes that are shared by many subjects as well as those that are unique to a single discipline" (Ross & Hogaboam-Gray, 1996, The Effects of Curriculum Integration section, para. 2). Thereby, curriculum integration could help educators to use time more effectively by enhancing student engagement, addressing one challenge of the 21st century educational landscape. Teachers could spend less time reinforcing the relevance of, as Beane (1995) put it, the "disconnected and incoherent assortment of facts and skills"(p. 618) that is the result of "the separate-subject approach" (p. 618).

Apple Inc. (2009) also made a case for the relevance of integrated curriculum in the 21st century through the development of the Challenge Based Learning initiative. Challenge Based Learning argues that the traditional discipline-based teaching model is outdated as 21st century students synthesize information differently as a result of technology. Additionally,

> In this interconnected world, with ubiquitous access to powerful technologies, new models of teaching and learning are possible, and engagement is paramount to meeting the needs of more students…The task of engaging more students to achieve has become increasingly important. (p. 1)

Many of the values that Challenge Based Learning espouse and the goals it aims to achieve are shared by the authors and scholars discussed in the previous paragraph and

this integrated approach taken by Apple Inc. is supported by Johnston et al. (2009) and The New Media Consortium. Lake (2000) also cited integrated curriculum as being a promising tool in "developing abilities required by life in the twenty-first century" (p. 3).

The purpose of this study is to explore the impact of participating in an integrated program on the lives of students based on their perceptions after graduating high school. This study is significant as it addresses many of the philosophical arguments related to curriculum integration and adds to the body of literature regarding its impact on students. It is important that this study is based in the students' perspectives as education ultimately exists for their benefit. Interviewing students after they have graduated is also important as they will have had time to reflect on their high school experiences and relate them to their immediate situation, their goals, and their achievements. Arguably, the broad purpose of secondary school is to give students the tools to move forward and succeed in their life goals, and, thus, it follows that students should be interviewed after graduating so that they can more appropriately judge the impact of their secondary school experience in their daily lives. The results of this study could contribute to a deeper understanding of integrated programs.

Conceptual Framework

The framework for this study was the "Know, Do, Be" (KDB) umbrella (Drake, 2012; Drake, Reid, &Kolohon, 2014). The KDB Umbrella is found in Figure 1. Drake et al. (2014) explained that, the KDB umbrella "identifies what is most important for to know, do and be in a particular context" (p. 42) and includes all subject areas K to 12; thus, the umbrella can "form a unifying framework for all subjects" (p. 43). The KDB

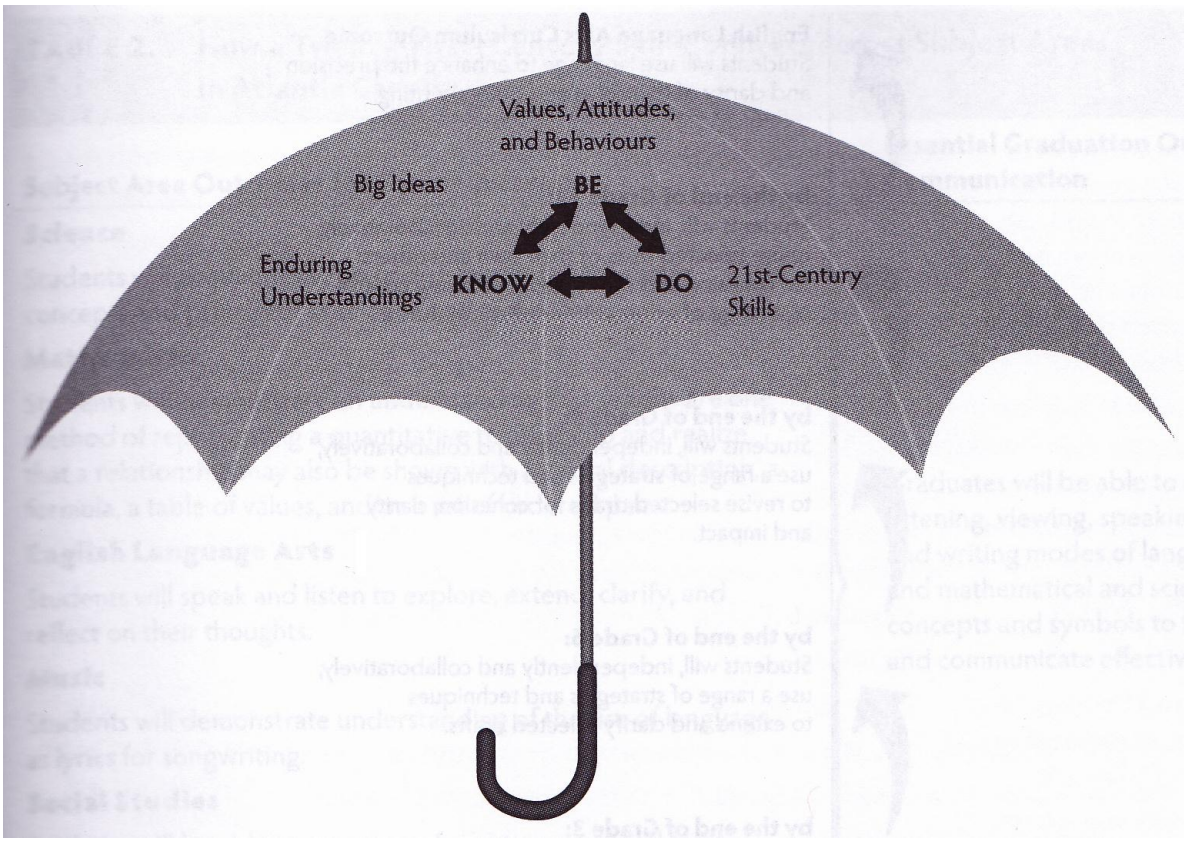

Figure 1. KDB umbrella (adapted from Drake et al., 2014, p. 43).

umbrella shows the "Big Picture" and, in a general sense, answers the question "what does a K-12 curriculum look like?" (Drake, 2012).

Many jurisdictions provide a K to 12 unifying framework in the front matter of all curricula. Here they identify the Know, the Do, and the Be. The Know is made up of interdisciplinary Big Ideas (eg., sustainability, change and continuity, patterns) and Enduring Understandings (the things that students remember years later). The Do is composed of interdisciplinary skills, often identified as 21st century skills, or skills such as collaboration, communication, creativity and critical thinking. The Be includes the most important values, attitudes, or behaviours students are expected to demonstrate. The Know, Do, and Be spiral throughout the curriculum. However, when there is no unifying framework ,"identifying a KDB is interpretive work" (Drake et al., 2014, p. 45). This is particularly true in Ontario where there is no explicit unifying framework.

In order to use the KDB as a conceptual framework for this study, it needed to be interpreted from the front matter of *Ontario Curriculum Grades 11 and 12: Interdisciplinary Studies* (MOE, 2002) document. For my interpretation I followed the process outlined by Drake et al. (2014), the interpretive process will be detailed next.

Know

The Know comprises the content that is mandated in curriculum documents. Big Ideas are broad concepts consisting of one or two words. Rather than simple facts or topics, Big Ideas are the "take-home message" that binds a collection of topics. For example, Drake et al. (2014) identified six fundamental Big Ideas contained within the social sciences content for K-12 in the province of Ontario's curriculum: "systems and

structures; interaction and interdependence; environment; change and continuity; culture; and power and governance" (p. 31).

According to Drake et al. (2014), "an Enduring Understanding connects Big Ideas and shows relationships" (p. 33). Enduring Understandings are conceptual, they are "what a student remembers long after the lessons and facts are forgotten" (Drake et al., 2014, p. 33). Drake et al. list a few examples of Enduring Understandings including:

- Citizenship comes with rights and responsibilities
- Global issues require global actions
- Physical activity contributes to healthy living
- There are widespread effects of technology on society. (p. 33)

In Appendix A, I identify and interpret Big Ideas and Enduring Understandings from the *Interdisciplinary Studies Grades 11 and 12* document (MOE, 2002). It is important to note that Appendix C represents the knowledge that should be contained in all courses designed using the *Interdisciplinary Studies* document. Within specific courses more Knows related to the focus of a particular program would be added.

Do

The knowledge articulated through the Know of the KDB supports and helps provide context to the skills or Do. According to Drake et al. (2014), many of the interdisciplinary "21st Century Skills are repeated across disciplines. While 21st century skills are often loosely defined, their goal is always to "prepare a student to be a productive and participatory citizen of the twenty-first century" (Drake, 2014, p. 35). C21 Canada (2012) identified key competencies for the 21st century to include creativity, innovation, and entrepreneurship; critical thinking; collaboration; communication;

character; culture and ethical citizenship; and computer and digital technologies. Drake et al. (2014) identify five broad 21st century Skills and the many specific skills that support them (See Appendix B). Twenty-first century Skills and the subset of skills that provide their foundation can be extracted from *the Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE, 2002) document by carefully examining it. Appendix C identifies excerpts from the front matter of the document pertaining to the Do. Through my interpretation, each excerpt has been connected to the corresponding 21st century skills and its subset of skills to provide a comprehensive picture of the Do contained within the *Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE, 2002) document. Again, it is important to remember that specific skills pertinent to individual programs would be added to the Do.

Be

The Be of the KDB can be difficult to identify as modern expectations (standards) are often intentionally constructed to be value-free. All standards, however, do reflect implicit values and this is particularly true when you examine the curriculum as a whole from K-12 (Drake et al., 2014). Drake et al. (2014) explain that the Be is often connected to, or can be derived easily from, the Enduring Understandings. The four items that make up the Be can be found in Appendix D were derived in this way and from the front-matter of the *Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE, 2002) document. Each Be is a direct quote or a paraphrase from the document, all paraphrasing has been marked with an asterisk.

Table 1 summarizes the entire KDB framework I extracted by analyzing and interpreting the *Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE,

Table 1

The KDB

KNOW		**DO**	**BE**
Big Ideas	**Enduring Understandings**	Higher-order thinking	Information literate
Career Paths	Career opportunities are constantly evolving as are the paths to obtaining them	Interdisciplinary research	Collaborative team members
Interaction and Interdependence	Disciplines of knowledge are interconnected	Interdisciplinary problem solving	Independent, lifelong learners
Systems and Interactions	The ability to approach problems through multiple lenses can lead to innovative solutions	Systems thinking	Enterprising and flexible
	Investigating more than one approach to knowledge leads to deeper understanding	Critical and creative thinking	Employable in a dynamic economy
		Collaborative decision making	
		Team building	
		Information literacy	
		Technological literacy	

2002) document. The KDB is presented here using as much of the document's original language as possible. This KDB framework will provide a part of the conceptual framework of this thesis study.

Parameters of the Study

Because of the unifying nature of the KDB model, it is particularly useful when dissecting integrated curriculum that draws from more than one curriculum document. The *Ontario Curriculum Grades 11 and 12*: *Interdisciplinary Studies* (MOE, 2002) document was used to define the parameters of this study. Participants needed to have completed a program that fell within the rubric of the *Interdisciplinary Studies* document; thus, the program should fit within the KDB identified in this section as the program is a reflection of the document itself. In summary, the KDB is the lens through which integrated curriculum was observed in this study, and the guidelines set out within the *Curriculum Grades 11 and 12:Interdisciplinary Ontario Studies* (MOE, 2002) document defined the scope.

Summary

This chapter has provided the context for this study by describing the researcher's connection to the topic, as well as background in the field of curriculum integration and in the types of programs under study. The specific problem investigated in the study was identified as literature supporting the need for a study to be conducted concerning curriculum integration. The conceptual framework used in this study was similarly identified and described.

The rest of this study is divided into four chapters: Literature Review, Methodology, Results, and Discussion. The Literature Review chapter will analyze the

current literature regarding curriculum integration, its definition, and its merits and drawbacks. In the Methodology section, the specific details regarding the qualitative methodology employed to gather data in this study will be outlined. Next, the Results chapter of the study will present the data gathered in this study and organize them according to the themes that emerged from the data. Finally, the Discussion chapter will interpret the data in order to draw conclusions and make recommendations for future research and practice.

CHAPTER TWO: LITERATURE REVIEW

In this section, the background information required to understand the context of the study presented will be addressed. Specifically, curriculum integration will be defined for the purpose of this thesis and the existing literature regarding the impacts of curriculum integration on students' lives will be explored.

Defining Integration

In order to conduct a study on the subject of curriculum integration, one must first ask the question: What is integrated curriculum?, "a definition is particularly elusive" (Drake, 2007, p. 25). Indeed, "different authors have used terms such as *integrated*, *interdisciplinary*, *multidisciplinary*, and *meta-disciplinary* without much consensus about the nature of the phenomenon being described" (Applebee et al., 2007, p. 1005). Czerniak et al. (1999) expressed similar concerns in defining the phenomenon of curriculum integration due to the "ambiguity [that] is evident in the sheer number of words used to describe integration: interdisciplinary, multidisciplinary, transdisciplinary, thematic, integrated, connected, nested, sequenced, shared, webbed, threaded, immersed, networked, blended, unified, coordinated, and fused" (p. 422). In this subsection, several definitions of integration will be presented and evaluated before arriving at a conclusion.

For the purposes of this project, Drake's (2007) example will be followed such that the terms interdisciplinary and integrated curriculum will be used interchangeably to describe curriculum that connects various disciplines in some way as "the essence of interdisciplinary approaches [is] looking at things from more than one perspective" (p. 25). The courses that employ integrated or interdisciplinary curriculum will be referred to as integrated programs.

Orillion (2009) contended that "interdisciplinary studies is defined not by the knowledge it produces but, rather, the process of synthesis" (p. 2). The viewpoint presented by Orillion of curriculum integration as being process oriented rather than product oriented provides solid grounding for a discussion regarding defining integrated curriculum. However, this perspective is far too shallow to be considered a complete definition and, therefore, others must be considered.

Drake (2007), Lake (2000), and Beane (1995) each offered a definition of curriculum integration for consideration. For Drake (2007), "the interdisciplinary curriculum makes more explicit connections across the subject areas. [The curriculum] revolves around a common theme, issue, or problem, but interdisciplinary concepts or skills are emphasized across the subject areas rather than within them" (p. 36). This definition emphasizes the interconnectivity between subjects using a rallying point (theme, issue or problem) while pursuing common learning outcomes across subject areas. Lake offered a similar definition, but stressed the use of projects and need for flexibility in the classroom: "Interdisciplinary education includes the following: a combination of subjects, an emphasis on projects, sources that go beyond textbooks, relationships among concepts, thematic units, flexible schedules, [and] flexible student grouping" (p. 3). Beane's (1995) definition identified the specific goal of curriculum integration as fostering the freedom to pursue learning uninhibited by the boundaries of specific disciplines: "curriculum integration, in theory and practice, transcends subject-area and disciplinary identifications; the goal is integrative activities that use knowledge without regard for subject or discipline lines" (p. 619). These three definitions have

significant common ground in terms of teaching outside of traditional disciplinary lines, but they are mediated by subtle differentiations in terms or emphasis.

According to Drake (1998), with regard to integrated curriculum, for many experts there is a continuum along which progressively more and more connections are made (Burns, 1995; Drake, 1991; Fogarty, 1991; Jacobs, 1989). Drake's (2007) continuum of integration is clear, concise and is arranged in order of ascending level of integration, meaning that with each level, disciplines become further intertwined. Her model begins with Traditional teaching whereby material is taught through the lens of only one discipline, and at the other end of the spectrum is transdisciplinary teaching that begins with a real-life context. Transdisciplinary curriculum "does not begin with the disciplines or with common concepts or skills. What is usually considered most important is the perceived relevance for the students" (Drake, 2007, p. 37). Drake (2007) identified several other levels of integration along the continuum between Traditional and Transdisciplinary including, in order of increasing integration: Fusion, Within One Subject, Multidisciplinary, and Interdisciplinary.

Rather than considering a continuum of curriculum integration as a unifying definition, it can also be viewed as a demonstration of Drake's (2007) notion that "educators can conceive of curriculum integration in a wide variety of ways, and its implementation can be unique in every setting" (p. 25). Drake (2007) also suggested that "[Interdisciplinary approaches] cannot be standardized or rarely even replicated by another set of teachers who set out to do the same thing" (p. 25). The varied conceptions of curriculum integration and the unique quality of each example of it are the essence of its power and appeal as a teaching tool. This study will honour the unique nature of

curriculum integration and refer to the continuum of integration as an aid in understanding it.

The Eight-Year Study

The Eight-Year Study is regarded by many as being foundational in terms of understanding education reform and particularly curriculum integration; according to Lipka et al. (1998), "it still stands today as the most comprehensive, long-range, experimental educational research study ever conducted in school settings, and its lessons are many and as pertinent today as they ever were" (p. 1). Pinar (2010) added that the Eight-Year Study was a "remarkable undertaking [which] remains today as perhaps the major school-based curriculum research project in the history of U.S. curriculum studies" (p. 295). As such, it is warranted to explore the Eight-Year Study before other literature concerned with integrated curriculum is addressed.

For the Eight-Year Study, postsecondary institutions suspended their "college and university admission requirements for the sake of curriculum experimentation" (Pinar, 2010, p. 295). The goal was to improve secondary education in the United States to concerns that secondary schools: did not have a clear central purpose, failed to give students a sincere appreciation of their heritage, did not prepare students adequately for the responsibilities of community life, seldom challenged students to meet their intellectual potential, did not know their student body well, did not provide adequate guidance, and failed to create conditions necessary for effective learning (Aikin, 1942).

Thirty schools participated in this experiment and are referred to as The Thirty Schools. The Thirty Schools took a wide range of approaches to education reform, but most incorporated at least some elements of curriculum integration. For example, student

centred investigations were often used as a teaching tool and "in conducting [these] investigations the class [would draw] upon physics, biology, and chemistry, using facts and principles, regardless of the specific subject or division to which they logically belong" (Aikin 1942, p. 50).

The approaches the Thirty Schools took were tested as the students of the Eight-Year Study moved on to postsecondary education. "About 2000 graduates of the Thirty Schools entered 179 colleges in the fall of 1936" (Aikin, 1942, p.107), and overall they rated as well or better than students who had not participated in the Eight-Year Study. Students of the Thirty Schools succeeded to a greater degree than their comparison students in almost every category, some of which included: academic achievement, academic honours, critical thinking, resourcefulness, time management, problem solving, participation in extracurricular activities, nonacademic honours, and vocational direction (Aikin, 1942). Upon examining the results further, Aikin reported that it was also found that "students from participating schools which made most fundamental curriculum revision achieved in college distinctly higher standing than that of students of equal ability with whom they were compared" (p. 117).

The Eight-Year Study is considered a seminal work in the field of integrated curriculum because the graduates of the Thirty Schools "that went furthest in that direction did better in college" (Lipka et al., 1998, p. 142). In terms of overall results of the Eight Year Study, Lipka et al. described:

> The success of students in the thirty schools over their matched pair counterparts in high school and college was quite dramatic. Ironically, high schools have yet to broadly attempt curriculum reorganization on the bases of the results the thirty

> schools achieved. The curriculum principles and processes which led to that success still merit attention in current efforts to improve high school programs. (p. 120)

Cook (2009) also commented on the positive results of the Eight-Year Study and the fact that many of its recommendations have not found their way into education systems and summarized the current state of integrated curriculum: "This call for reform in the 1920's and 1930's began a debate that has yet to be resolved. Should curriculum be presented through subjects or integrated around real life themes or both?" (p. 26).

Concerns Related to Use of Curriculum Integration

Today there are some concerns related to curriculum integration. In Ontario, Clausen and Drake (2010) noted that integrated curriculum along with many other educational reforms have been attempted, but not fully tested, as reforms tend to be repealed for political and economic reasons. For example, "at times, sectors of the province so embraced integrated approaches that disciplinary boundaries blurred. Soon afterwards, this romance with integration inevitably cooled to be replaced with a return to the disciplines" (p. 69). In addition to suffering setbacks due to political factors, Harrell (2010) raised concerns regarding teachers' ability to execute integrated curriculum, asserting that as teachers are educated in single subject disciplines, they are, therefore, not properly equipped to deliver an interdisciplinary curriculum. Vars (2000) outlined related concerns:

> many teachers see interdisciplinary instruction as a technique or method, not as a fundamentally different way to conceptualize and carry out curriculum and instruction. Too often this has resulted in units of study like "Chocolate" or

> "Dinosaurs" that are cute and fun but may neither teach fundamental concepts nor address the very real personal and social problems that confront human beings every day. (p. 84)

Vars compounds the concern over teachers being unprepared to take on an integrated approach with distress that many teachers feel they cannot completely commit to integration because of pressure to be accountable to standards:

> Recently I attended a workshop in which a teacher described an exciting project that she had carried out with her students, investigating a stream pollution problem near the school. One of the teachers in the audience said, "I could never do that, because I have to teach the proficiencies!" Unfortunately there are too many teachers like this one, who see the situation as "either or" rather than "both and". (p. 84)

Additionally, Czerniak et al. (1999) also identified:

> The pressure of state proficiency and standardized tests seems to be a limiting factor in implementing an integrated curriculum. Because most of these tests still examine content separately, one can question whether the understanding, skills, and knowledge learned in an integrated unit would transfer to these tests. (p. 427)

Conversely, Drake (2012) claimed that curriculum integration can be achieved in such a way as to be accountable to both curriculum documents and standardized testing through the use of backward design and curriculum mapping. Wrightstone (1935) compounded this assertion by demonstrating that through integrating or broadening the focus of subject matter at the expense of "the so-called fundamentals-reading, writing, spelling,

arithmetic, and grammar" (p. 56) that student achievement was increased if it was affected at all.

Concerns related to the use of curriculum integration are not limited to issues of volatile political support, teachers' understanding of the approach, and the impact of standardized testing. Some fear that integration can hurt the integrity of disciplinary knowledge. Ross and Hogaboam-Gray (1996) articulated that "there are risks in curriculum integration. The structure of the disciplines, their internal organization, of ideas and principles, could be lost in a merger" (The Effects of Curriculum Integration section, para. 3). This sentiment appeared to be a common concern related to the implementation integrated curriculum. Czerniak et al. (1999) stated that, "some educators question integration across the curriculum, because in the effort to integrate topics, science and mathematics content becomes superficial and trivial" (p. 421), while Brewer (2002) shared concerns regarding art specifically: "although integrated and correlated curricula can provide positive learning circumstances, the problem is that, in practicality these approaches often result in classes that deny visual art its value as a distinct discipline" (p. 31).

Venville, Wallace, Rennie, and Malone (1998) offered a different view; they discussed curriculum integration as a "double-edged sword." In their study, they found that "on the one hand, teachers observed that integration had many benefits for their students, including better understanding of mathematics and science concepts when applied to contextualized technology tasks" (p. 300). And then, conversely, "on the other hand, teachers raised concerns about the breakdown of departmental structures and students not being exposed to the depth of content from specialist teachers in each of the

respective disciplines" (p. 300). They concluded that "it would appear that for many teachers curriculum integration threatens existing structures of power and control in schools" (p. 300). Rennie, Venville, and Wallace (2011) illustrated the role power structures play in the implementation of integrated curriculum through a different avenue:

> Despite the apparent support for integration, or at least a cross-curricular approach, a subject-centred curriculum persists in most schools, particularly at the high school level. Perhaps this is not surprising, given that curriculum documents for most school subjects are still organized around the parent disciplines. (p. 140)

Vars (2000) called for change to the structures of education in favour of integrated curriculum. He conveyed several arguments in support of the need for integrated curriculum:

> I long for the day when people will realize that the top-down, departmentalized, piecemeal approach to providing common learnings is undemocratic, contrary to the way the brain works, and ignores pressing social realities. Nothing we learn is really functional until and unless we integrate it into our total personal-social being, so to me it just makes sense to provide those learning within an integrative context. (p. 84)

In summary, many structures may be required to change to accommodate the widespread use of integration and this could present an obstacle or concern regarding its use.

Brewer (2002), Applebee et al. (2007), and Lake (2000) shared concerns that not enough research exists regarding the impact of using integrated curriculum. Lake completed a review of available literature concerning integrated curriculum and,

according to her, the publications can be separated into three categories. The first and largest group,

> describes teachers' experiences in the form of descriptions of thematic units they have taught or collaborations with other teachers. It is the conviction of these writers that an integrated curriculum meets the needs of their students, although they have not conducted a specific study to document this. (p. 8)

The second group consists of "a large number of reports on how to implement an integrated curriculum successfully. These reports are frequently written by teachers or researchers who have been involved in programs they believe to be successful at enhancing learning" (p. 8). Finally, the third and smallest group of publications consists of "research reports documenting comparison studies that were designed to determine the effectiveness of an integrated curriculum on content learning and attitude" (p. 8). As various incarnations on curriculum integration become more prevalent (Johnson, 2013), more opportunities to study the phenomenon will present themselves, providing the potential to address concerns over whether or not sufficient research pertaining to the impact of curriculum integration on students has been conducted.

Rationales Promoting Use of Curriculum Integration

Much of the literature relating to curriculum integration contains philosophical or ideological elements espousing reasons for promoting integration or determining appropriate circumstances under which curriculum integration provides the most benefit to students. According to Jacobs (1989), "it is not that schools should avoid dealing with specific disciplines; rather, they also need to create learning experiences that periodically demonstrate the relationship of the disciplines" (p. 5). Tientken (2013) surmised:

> One curriculum scope and sequence cannot form the basis for successful entry into the tens of thousands of career options. There is not one best path that can prepare all children to attend one of the more than 4,400 colleges in the United States. (p. 9)

The perspectives articulated by Jacobs and Tientken position integration as an educational tool and an alternative approach to match the learning styles of a diverse population of students.

In terms of choosing the appropriate venue to introduce integrated curriculum Orillion (2009) reported: "the relationship between learning outcomes and interdisciplinary curriculum is mediated by institutional culture. Moreover, to understand the relationship between student outcomes and the curriculum, it is necessary to examine the curriculum as it is enacted in classrooms" (p. 16). Applebee et al. (2007) also found that the value of integrated curriculum needs to be determined locally within schools. Applebee et al. summarized the decision-making process and “trade-offs” to be considered in the following excerpt:

> The problems facing interdisciplinary course work are many and have been reiterated by many commentators: the need for compatible personalities among team members, the difficulty in arranging sufficient planning time, and the lack of textbooks and other materials that might make implementation of an interdisciplinary course easier. The benefits have also been frequently cited: The enthusiasm among teachers and students that comes from exploring interesting new ideas, the power that comes from the broader perspective that multiple disciplines can provide, the sense of shared purpose. During the time we studied

> them, the experiences of the 11 teams in our study echoed the full range of problems, as well as of benefits, that others have written about. Deciding to go forward with interdisciplinary work is thus a matter of trade-offs, and knowing what those trade-offs are should help teachers and administrators make more informed decisions about whether and how to go forward. (p. 1037)

Applebee et al. drew the conclusion that "rather than talking about interdisciplinary versus discipline-based courses, it may be more helpful to think about the contexts in which both kinds of study are most useful" (p. 1035). This perspective positions disciplinary approaches and interdisciplinary approaches as equally valid educational tools depending on individual educational contexts.

Rennie et al. (2011) argued that education should take a balanced perspective between disciplinary and interdisciplinary perspectives. They asserted that

> Somewhere between these opposing forces there has to be a balance, a position that can serve the need for discipline knowledge and the need to understand the interdisciplinary nature of the issues and problems posed by the world outside of school. (p. 157)

According to Rennie et al., the problem is that disciplinary and interdisciplinary perspectives are perceived as being at odds with one another. They described:

> Within a balanced curriculum, students can be encouraged to reflect on and critique subject-specific knowledge, understand the limitations of that knowledge, particularly in applied situations, and recognize when creativity, lateral thinking, adaptive help-seeking, and trial and error play a role in the knowledge-building process. This broader, more balanced view of curriculum allows students,

> teachers, and researchers to value disciplinary knowledge and to utilize the cognitive and practical tools that the discipline may offer. At the same time, it allows students, teachers, and researchers to look outward in order to engage in relevant, exciting, and motivating real-world problems and issues, and to explore how disciplinary knowledge can be useful in understanding, addressing, and solving those problems and issues. (pp. 157-158)

The idea of a balanced curriculum proposed by Rennie et al. appears to offer a home to integrated approaches within traditional curriculum.

Many scholars promote integrated curriculum because they feel it more naturally matches the way in which people learn and the way the world is structured. In Meier's (1998) opinion, emphasizing the connections between the disciplines is important so that learning is perceived as relevant rather than "learning facts for facts' sake" (p. 493). Dewey (1938) also emphasized the importance of connecting disciplines. He made the argument that when taught through a disciplinary approach, subject matter becomes isolated in the mind of the student. In order to effectively recall the information the student would have to be exposed to the same conditions under which the original lesson took place. Because the information "was segregated when it was acquired" it is, therefore, "so disconnected from the rest of the experience that it I not available under the actual conditions of life" (Dewey, 1938, p. 48). Beane (1991) presented an anecdote that provides a similar philosophical foundation for the use of integrated curriculum further highlighting the importance of emphasizing the connections between bodies of knowledge:

> Given a pile of jigsaw puzzle pieces and told to put them together, no doubt we would ask to see the picture they make. It is the picture, after all, that gives meaning to the puzzle and assures us that pieces fit together, that none are missing, and that there are no extras. Without the picture, we probably wouldn't want to bother with the puzzle. Ironically, this situation is very much like what we ask young people to do all the time in school. To students, the typical curriculum presents an endless array of facts and skills that are unconnected, fragmented, and disjointed. That they might be connected or lead toward some whole picture is a matter that must be taken on faith by young people or, more precisely, on the word of adult authority. (p. 9)

Dewey's (1938) train of thought is echoed by a number of modern authors who promote integrated curriculum citing that in the "real world" knowledge is not segregated. For Czerniak et al. (1999),

> The idea of connecting subject areas has considerable face validity, because it seems like common sense. In the real world, people's lives are not separated into separate subjects; therefore, it seems only logical that subject areas should not be separated in schools. (p. 421)

Meier (1998) also made a similar argument in favour of integration: "Clearly, once individuals leave school, no lines separate disciplines. Applying knowledge, integrating skills, and working with others are essential to successful problem solving in the workplace "(p. 438).

Rennie et al. (2011) stated that "one of the common themes that characterized the integrated practice was that of relevance. Distinct forms of relevance revealed by their

analysis included references to employment, to personal development and relationships, and to social and political contexts" (p. 158). Furthermore, MacMath et al. (2010) expressed that "Research examining the implementation of integrated units reveals consistently high levels of student motivation. In most cases, students were motivated because they felt that the integrated unit was *relevant* to their daily lives" (p. 87). Relevance in curriculum has become increasingly important in the 21st century, according to Apple Inc. (2009), "traditional teaching and learning strategies are becoming increasingly ineffective with a generation of secondary students who have instant access to information, embrace the roles of content producer and publisher and have access to extensive social networks online" (p. 1). Apple Inc. identified the cause of ineffectiveness results from failing to connect teaching to the real world:

> High school curriculum tends to present students with assignments that lack a real-world context and that lead to uninspired projects and end in a letter grade or score. Many students either learn to do just enough to get by or they lose interest and drop out. (p. 1)

Student engagement can be enhanced. Drake (2007) wrote that using integrated curriculum "teachers can be creative. They can set curriculum in a relevant context. They can craft it around the needs of students. They can even ask for students' input into what students want to learn" (p. 25).

Overall, there were many rationales for employing the use of curriculum integration presented in the literature. Many of the rationales are philosophical or ideological in nature and have not been proven. What can be reasonably established is that integrated curriculum offers intriguing possibilities does not harm students and is,

therefore, worth exploring. In Lake's (2000) report, she reviewed 10 studies and found no detrimental effects on learning when students participated in an integrated curriculum. This conclusion seemed to be consistent among researchers; integrated curriculum is at least benign in terms of its impact on students, but many studies report positive impacts to varying degrees. The next three sections of the Literature Review will explore studies reporting on the specific impacts participating in integrated programs can have on students.

Impact on Student Learning

This section will report on studies that investigated the impact using integrated curriculum had on student learning. Student achievement will be discussed; however, this section will take a broader view of learning. An example of this broader view can be seen in the findings of Elliott, Oty, McArthur, and Clark (2001). They created and implemented an interdisciplinary course at the undergraduate level that integrated science and math and compared their results to the standard algebra course covering the same material. Elliott et al. did not report on student achievement levels, instead they reported on problem-solving skills, critical thinking, and student attitudes:

> No significant difference was found in problem-solving skills between students in the interdisciplinary course and students in the college algebra course. Students in the interdisciplinary course had slightly larger gains in critical thinking and significantly more positive attitudes at the end of the course than the students in college algebra. (p. 811)

Venville et al. (1998) interviewed teachers who were using integrated curriculum between grades 7 and 9 in 16 Australian schools. They too found that the use of integrated curriculum had a number of impacts on student learning:

> The contextualized nature of problem solving was one highly regarded benefit of integration, especially by mathematics teachers. Some teachers noticed their students better understood mathematics and science concepts when they applied their knowledge to a practical task in technology and, conversely, the technology products were said to be of better quality when the students were able to use mathematics and science skills and knowledge to improve their designs. Teachers commented that they also appreciated the worldly application of the concepts. According to some of the teachers, working in an integrated situation meant that students could see the common threads between the separate learning areas and that they could better transfer knowledge and skills between subjects. Teachers were able to reinforce similar ideas in different teaching contexts, and they could also come to a consensus on ways to teach common concepts. (p. 299)

Students did face some challenges associated with learning through integrated curriculum. Some students "lacked the ability to plan and manage their time effectively for long-term integrated projects" (Venville et al., 1998, p. 299). Yet, generally integrated curriculum presents the potential for deeper learning (Venville et al., 1998).

On the whole, Ross and Hogaboam-Gray (1996) found that "curriculum integration contributed to higher achievement" (Results of the Study section, para. 2). They compared two schools, one that used integrated curriculum and one that did not. Ross and Hogaboom-Gray provide a number of intriguing results regarding various facets

of student learning. One point of particular interest is that integrated curriculum appeared to promote a "mastery orientation" in students meaning that students were intrinsically motivated to learn.

In a 4-year study at North Carolina State University where an integrated math, physics, engineering, and chemistry course was offered, Beichner et al. (1999) reported improved academic performance, but also noted important gains in other areas:

> Qualitative and quantitative research results indicate that students in the experimental courses outperformed their cohorts in demographically matched traditional classes, often by a wide margin. Student satisfaction and confidence rates were remarkably high. We also noted substantial increases in retention and success rates for groups underrepresented in science, math, and engineering. Placing students in the same teams across multiple courses appears to have been the most beneficial aspect of the learning environment. (p. S16)

In terms of achievement, student pass rates in the first year of study were 69% in the integrated course and 52% in the traditional stream; in the second year, the integrated course yielded a 78% pass rate as opposed to the 50% pass rate recorded in the traditional program (p. S20).

Caudill (2009) looked purely at achievement using a standardized test to investigate student achievement levels in grade 3 reading using interdisciplinary curriculum. Caudill "researched student Standards of Learning (SOL) scores prior to implementation of interdisciplinary curriculum and achievement scores post implementation of interdisciplinary curriculum to provide a contrast" (p. 1). She found a statistically significant increase in the SOL grade 3 reading scores.

MacMath et al. (2010) found similar results by targeting a particular student population. They undertook a case study of at-risk students in Ontario and found that they experienced higher levels of academic success than previously; also "students experienced feelings of self-efficacy when they were able to use what they had learned in one classroom to answer questions and make connections in another classroom" (p. 93). This study suggests that there could be a number of applications for integrated curriculum whereby it could help maximize student learning. Perhaps this case exemplifies a particular situation in which integration is most appropriate, aligning with the ideas put forth by Orillion (2009) and Applebee et al. (2007) that the choice to use integrated curriculum needs to be made locally in order to ensure its appropriateness.

Impact on Student Engagement

Much of the available literature promotes increased student engagement as being a common attribute of employing integrated curriculum; however, many are not research-based and are rooted in the personal opinion or pedagogical outlook of individuals (Applebee et al., 2007; Brewer, 2002; Lake, 2000).

Apple Inc. (2009) made a case for the increased importance of student engagement in the 21st century: "in this interconnected world, with ubiquitous access to powerful technologies, new models of teaching and learning are possible, and engagement is paramount to meeting the needs of more students" (p. 1).

Ross and Hogaboam-Gray (1996) compared grade 9 math science and technology programs at two different schools in Ontario, both considered to be "excellent schools." They discovered that "curriculum integration had a mixed effect on student attitudes" (Results of the Study section, para. 5).

MacMath et al. (2010) found that with the use of integrated curriculum, motivation was increased with at-risk students. They reported that, "students and teachers shared that they felt the integrated unit was motivating and relevant to students' lives. By moving beyond a single discipline, both teachers and students felt their problem-solving activities mirrored problems encountered outside of the classroom" (p. 93).

In a newly developed integrated course called *Algebra for the Sciences* at Oklahoma State University, Elliott et al. (2001) discovered that students enrolled in the the course had "significantly more positive attitudes at the end of the course than the students in college algebra" (p. 811). Similarly, Johnson et al. (2009) found "in a pilot of the [integrated] approach that ran in a variety of formats in six schools across the US, fully 97% of the 321 students involved found the experience worthwhile". Research on the impact of integrated curriculum on student engagement tended to find positive correlations similar to those described by Elliott et al. and Johnson et al.

Social Impact on Students

Integrated curriculum has also been reported to impact students' social experiences within educational contexts. Beichner et al. (1999) emphasized their findings on the social impact the integrated course had on students:

> We believe the most important finding from our analysis of the qualitative data is the central role that socialization played in the success of the students… We also saw evidence of long-term commitments being made among the students, including plans to room together in subsequent semesters and even to ''gang-

> register'' for [courses outside the integrated program] so that they could continue their collaborations. (pp. S21-S22)

Ross and Hogaboam-Gray (1996) also found that there was a social impact on students when using integrated curriculum:

> Over the semester Trenton students began to work together better. For example, Trenton students were more likely than Woodville students to exchange ideas about how to build their group projects and were less likely to fool around. The ability to work effectively with peers is an important life skill, as well as being a central school outcome. (Results of the Study section, para. 4)

In their study of integrated programs in 16 schools in Australia, Vennville and Wallace (1998) also found that the use of integrated curriculum seemed to help facilitate positive interactions among students. They recorded:

> benefits for students noted by teachers included the enhancement of group working skills and creativity, increased cooperation and collaborative learning, successful behavior modification in some students, increased levels of responsibility in students' work, and increased mentoring between students of different ages. (p. 299)

Johnson et al. (2009) explored challenge-based learning, an approach rooted in curriculum integration and found that students felt they were able to impact their school and community through the program: "Initially unsure their efforts would matter, by the end of their respective projects 80% of participating students reported that they had made a difference in their schools or communities by addressing their challenge" (p. 2).

Helping students create positive relationships involving teamwork and involvement with the broader community is a particularly interesting impact.

Conclusions

Although not all the studies I examined endorsed integrated approaches, the majority seemed positive. Hinde (2005) stated: "integration has proven to be effective in engaging students and increasing their achievement on standardized tests and other measures of achievement" (p. 107). Based on her review of literature, Lake (2000) stated that "findings support the positive effects of curriculum integration" (p. 12). She summarized some of these impacts as: increased application of skills, faster information retrieval, deeper learning, positive attitudes, and the creation of an integrated knowledge base. Among the various impacts on students that integrated curriculum has been associated with producing, it seems that the one that can be best asserted is that

> The bottom line on the research concerning the efficacy of an interdisciplinary approach to curriculum is that when skilled, knowledgeable teachers employ integrated methods, student achievement is equal to, or better than, that of students who are taught in the traditional separate-subject approach. (Hinde, 2005. p. 107)

Given this limited conclusion, it appears that more research regarding the impact integrated programs can have on students' lives is warranted.

Summary

This literature review has investigated the impact integrated curriculum can have on students' lives by first establishing the nature of integration, and second dissecting the

literature available on the subject. In the next section of this thesis, the research methods employed in this study will be described.

CHAPTER THREE: METHODOLOGY

This chapter provides a review of the research procedures used to collect and analyze the data for this study. It includes a description of the research design, data collection and instrument development, data analysis, the researcher's role, the selection of the participants and site, as well as the ethical considerations and limitations related to the study. The names of all the participants in this study have been changed in order to protect their privacy.

Research Design

The research in this study was focused on understanding the impact that participating in integrated programs in Ontario has on students' lives. A qualitative design was chosen for this project in order to glean students' experiences and perceptions that were relevant to the study. The use of qualitative research methods in education arose from the belief held by educational philosophers and scholars that "the traditional approach [to research]… relied too much on the researcher's view of education and less on the research participant's view" (Creswell, 2005, pp. 41-42). Patton (as cited in Mertens, 2005) suggested that qualitative methods should be used in a study that requires detailed, in-depth information about certain people or programs, or when the study focuses on diversity of opinions held by individuals (p. 233). A qualitative methodology is best suited for this study in order to best understand the experiences of the students who participate in integrated programs. Specifically, a basic interpretive qualitative design was used. According to Merriam (2002), in such a design

> the researcher is interested in understanding how participants make meaning of a situation or phenomenon, this meaning is mediated through the researcher as an

> instrument, the strategy is inductive, and the outcome is descriptive. In conducting a basic qualitative study, you seek to discover and understand a phenomenon, a process, the perspectives and worldviews of the people involved, or a combination of these. Data are collected through interviews, observations, or document analysis. (pp. 6-7)

In conducting the research, I understood that contextual factors influenced participants' points of view. As Schram (2003) details, a qualitative researcher is "focused on particular people, in particular places, at particular times-situating people's meanings and constructs within and amid specific social, political, cultural, economic and other contextual factors" (p. 33).

Interviews were chosen as the research tool to support the qualitative design. Interviewing as a research medium seemed to be the best fit because, as Seidman (2006) put it, "at the root of in-depth interviewing is an interest in understanding the lived experience of other people and the meaning they make of that experience" (p. 9) and "it affirms the importance of the individual [and] …it is deeply satisfying to researchers who are interested in others' stories" (p. 14). In the case of this thesis study, I aimed to understand the experience of students who participated in integrated programs and how their experiences in those programs impacted their postsecondary lives.

Selection of Participants and Site

Creswell (2005) emphasizes that "in qualitative inquiry, the intent is not to generalize to a population, but to develop an in-depth exploration of a central phenomenon" (p. 203). In this study, the central phenomenon was the impact participating in integrated programs had on students' lives. To select a sample through

which to explore this phenomenon, I referred to Miles and Huberman (1994) who stated that "Qualitative researchers usually work with *small* samples of people, nested in their context and studied in-depth" (p. 27). Therefore, I chose 10 participants who had taken part in an integrated program in Ontario that conformed to the guidelines of the *Ontario Curriculum Grades 11 and 12: Interdisciplinary Studies* (MOE, 2002) document. As in many qualitative studies, the selection of participants was "*purposive* rather than random" (Miles & Huberman, 1994, p. 27). Denzin and Lincoln (as cited in Silverman, 2005) state that researchers employing purposive sampling "seek out groups, settings and individuals where…the processes being studied are most likely to occur" (p. 129). In this case, I sought out former students who had participated in a program that was based on *The Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE, 2002) document. While it would be valuable to assess the immediate impact of participating in an integrated program, for the purposes of this study it was deemed important to assess the students' perceptions after time had passed since graduating high school in order to understand the long-term impacts of participating in integrated programing on their lives.

Finding Participants

This study also employed snowball sampling which, as Creswell (2002) stated, "is a form of purposeful sampling that typically proceeds after a study begins and occurs when the researcher asks participants to recommend other individuals to study" (p.196). During several interviews, I asked participants if they knew of anyone else who fit the criteria of the study and might be interested in participating. I followed up on these leads in an effort to gain participants.

Participants were contacted either through email or over the telephone. If they agreed to participate in the study, I asked them to choose the interview location. I asked that the location be quiet, so as to facilitate tape recording, and for the site to be a place in which the participant could relax and be distraction-free for the duration of the interview. The chosen interview locations included participants' homes, libraries, and, in one case, an interview was conducted over dinner in a quiet restaurant. Three interviews were also conducted over Skype, as the participants lived too far away for an in-person interview.

The Participants

The participants of this study represent three Southern-Ontario boards of education, five secondary schools, and five separate integrated programs. Three of the programs participants took part in had to do with outdoor education, the environment and leadership, one program focused on visual art, and one centred on high performance athletics.

Table 2 provides basic information about the participants in this study including their age, gender, education, employment and the integrated program they completed. The aim of Table 2 is to enhance the context of this study by giving the reader a better understanding of the individuals who were interviewed.

The breakdown of the specific integrated programs as well as the school boards they were a part of can also be seen in Table 2. The school boards are labeled as Board 1, Board 2, and Board 3. Since there were participants from only one integrated program focused on art, each of them is simply labelled Art. The same is true of the program focused on high performance athletics; therefore, it is simply labelled Athletics. I interviewed people from three separate integrated programs where the focus was outdoor

Table 2

Participant Information

Participant Name	Approx. Age	Occupation	Education	Integrated Program Focus	School Board	Integrated Program
Sally	Early 30s	Graphic Designer	Diploma in art from and Ontario college	Art	Board 1	Art
Brittney	Mid-20s	Administrative Assistant	Attended college in Ontario	Outdoor education and leadership	Board 1	OEL1
Sarah (completed two integrated programs)	Mid-20s	Game Day Events Manager for a CHL hockey team	Business degree from an American University	Outdoor education and leadership	Board 1	OEL1
				High performance athletics	Board 1	Athletics
Penny	Mid-20s	Teacher at a separate school that focuses on outdoor education and caters to at risk students	Physical and Health Education Degree from an Ontario University	Outdoor education	Board 2	OEL2
			Bachelor of Education from an Ontario university			
Abby	Early 30s	Television advertising industry	Diploma from an Ontario college	Art	Board 1	Art
Jim	Late 20s	Fisheries Officer with the Ministry of Fisheries and Oceans	Bachelor Degree in science from an Ontario university	Outdoor education and leadership	Board 1	OEL1
Josie	Mid-20s	English Teacher in Asia	Bachelor Degree from a Canadian University	Outdoor education and leadership	Board 1	OEL1
Mary	Early 30s	Teacher with an Ontario board and Outdoor Educator	Undergraduate degree and Bachelor of Education from two different Ontario Universities	Outdoor education and leadership	Board 3	OEL3
Kevin	Early 20s	University student	Pursuing an undergraduate degree in ecology and math at an Ontario university	Outdoor education and leadership	Board 1	OEL1
Betty	Late teens	Beginning undergraduate studies	Pursuing an undergraduate degree in art at an Ontario university	Art	Board 1	Art

education, leadership and the environment. These programs are labelled OEL1, OEL2, and OEL3 in Table 2.

Since the participants were all fairly similar regarding their academic achievement, it will be addressed here rather than in the table. The participants in this study were generally average or above average students academically speaking.

The Integrated Programs

I interviewed participants from as many different programs as possible because, as Creswell (2002) stated, "one characteristic of qualitative research is to present multiple perspectives of individuals in order to represent the complexity of our world" (p.194). Creswell's (2002) perspective was balanced with choosing participants from a group of people who fit the study's criteria and with whom I was already acquainted. Participants in this category could provide a great deal of depth with regard to their interview as a relationship between the researcher and participant was established prior to the study.

Table 3 gives a short description of each of the programs participants of this study took part in. The descriptions are paraphrased from official school board documents such that the programs cannot be readily identified. The codes for identifying each of the programs are the same as those used in Table 2.

Data Collection and Instrument Development

The purpose of the interviews was to understand the experiences of participants regarding integrated programs, as well as their perceptions pertaining to the impact of these programs on their lives. The interviews were semistructured in that I prepared a set of questions that were asked to all participants, but the follow-up questions differed based on the participants' individual interpretation and answers. I kept field notes of body

Table 3

Description of the Integrated Programs

Integrated Program	Description
Art	This course develops an intensive portfolio for advanced Arts students interested in preparing for entrance to a college or university of Fine Art, Design or other related programs. Articulated with a local college this course explores; Visual Arts, Applied Design, Fine Art Drawing, Painting, Visual and Non-Traditional art form training.
Athletics	This program is designed for motivated athletes intending to pursue further excellence in athletics. The program provides students with the opportunity to combine their academic course loads with intense training sessions, and the psychological preparation required to participate at a postsecondary level. Emphasis is placed on creating a sport portfolio, acquiring certification, and creating personalized fitness programs.
OEL1	Students investigate the impact of human activity on the environment both locally and globally with an emphasis on exploring their role in taking action to protect our natural resources. Students will also deepen their appreciation for the outdoors and enhance their leadership skills through outdoor trips such as winter camping, hiking and canoeing.
OEL2	This course is a four-credit package that develops practical skills related to communication, leadership, outdoor education, and environmental awareness. Emphasis is placed on authentic learning with incorporation of field trips and hands-on learning experiences.
OEL3	An environmental leadership program that fosters a sense of wonder for the natural world in students, develops an understanding of current environmental issues, and teaches hands-on skills in sustainable living while meeting Ontario curriculum requirements for high school credits

language and questions that I wanted to ask as follow-up during the interviews, and I was careful with my own demeanour and words in order to take into account Kvale's (1988, as cited by Miles and Huberman, 1994) guidelines:

> during and 'open-ended' interview much interpretation occurs along the way. The persondescribing his or her 'life world' discovers new relationships and patterns during the interview; the researcher who occasionally 'summarizes' or 'reflects' what has been heard is, in fact, condensing and interpreting the flow of meaning. As Kvale (1988) suggests the 'data' are not being 'collected', but rather 'co-authored'. (p. 35)

Keeping this in mind, I used my notes to ask further questions in order to probe deeper to gain details and enhance my understanding of participants' experiences and perceptions. This process aligns with Seidman's (1991) view that

> although the interviewer comes to each interview with a basic question that establishes the purpose and focus of the interview, it is in response to what the participant says that the interviewer follows up, asks for clarification, seeks concrete details and requests stories. (p. 59)

Once I had developed an understanding of qualitative, semistructured interviewing I began to create an interview guide to give direction to the interviews (See Appendix A).

Each participant was asked the same question first: Can you please tell me a story about your participation in integrated programs? Beginning with this very open-ended question I hoped to get a sense of what was most meaningful to each of the participants.

The second question: "Can you describe the structure of the integrated course you participated in?"and its follow-up questions were asked in order to understand each of the

individual programs participants experienced and the nature of the curriculum integration employed within those programs.

Beyond understanding the structure of the integrated programs and the meaning participants attributed to participating in integrated programs, the interview questions were designed to discover what participants learned to Know, Do, and Be (KDB) by taking part in integrated programs. This was important in order to be able to compare students' experiences to the conceptual framework used for this study that identifies the KDB within the*The Ontario Curriculum Grades 11 and 12:Interdisciplinary Studies* (MOE, 2002) document. Question three of the interview guide addressed this element of the study by first asking, "Do you feel your participation in integrated programs has impacted your life in any way that would be different if you had been in a traditional program?" This question was designed first, to gain some further details regarding the meaning students attributed to their experiences, and second, to transition into discovering what they learned to Know, Do, and Be. The follow-up questions to question three explored the KDB framework further by asking questions like:

- Did you learn any skills within the program that you still use today?
- Do you feel participating in an integrated program has an impact on your academic achievement?
- Do you feel participating in an integrated program has an impact on your engagement in school activities?
- Do you feel participating in an integrated program has an impact on your social relationships?

- Do you feel participating in an integrated program has an impact on your choices in terms of postsecondary education?

Once the interview questions had been developed, in order to perfect them they were first piloted. I conducted a mock-interview with a colleague who then provided critical feedback. This feedback was incorporated into the questions constructed to glean the richest information possible, and that I, as the interviewer, was as neutral as possible. Practicing also served to ensure that the interviews would adhere to a reasonable timeframe. The actual interviews ranged in duration from just under 20 minutes to just under an hour in length. The interview questions were also vetted through my thesis supervisor and committee.

Researcher's Role

The impact of the researcher's values on a study is not insignificant; "the qualitative researcher decides what questions to ask and in what order, what to observe, what to write down" (Mertens, 2005, p. 247); Creswell (2002) expanded on this aspect of qualitative research:

> It is often difficult to discern where reporting findings end and making interpretations begins. A qualitative stance is that all findings and all interpretations are subjective assessments by the researchers and that individuals can never be 'neutral' or remove themselves from the study to report "objectively". (p. 278)

For the reasons identified by Mertens and Creswell it is necessary to identify my role in the study and reflect on the biases, values, beliefs, and assumptions I hold such that the qualitative nature of the study does not detract from its findings. My biases in relation to

this study are focused around my personal opinions and experiences regarding integrated curriculum. I believe that integrated curriculum is an extremely valuable educational tool and my experiences using it as an educator and as a student have all been very positive. I hold that integrated curriculum has the potential to increase student and teacher engagement in education. I also hoped to conduct valuable research that will contribute to the educational community.

These views have the potential to bias the study and compromise its results if not accounted for as I might orchestrate the study or interpret the data in such a way as to yield answers that would support my opinions.

In analyzing the data, I also tried to understand the experience and perspectives of participants by carefully reading the themes that were discussed by participants in the interviews. In addition, I asked all participants to review my transcriptions to ensure that they were accurate and that their meaning was well represented. Throughout the entire process, I strived to be as reflexive as possible, reflecting on my biases, values, and assumptions and actively recording them (Creswell, 2005, p. 50).

Data Analysis

I read the transcribed tapes several times in keeping with Merriam's (2002) perspective that data analysis is an inductive strategy in which one compares one unit of data against another looking for common patterns which are given codes and refined or adjusted as the analysis is conducted (p. 14). As well, Creswell (2002) said: "preliminary exploratory analysis…consists of obtaining a general sense of the data, memoing ideas, thinking about the organization of the data and considering whether more data are needed" (p. 265).

In the second phase of data analysis, I began to organize the data further; "describing and developing themes from the data consists of answering the major research questions and forming an in-depth understanding of the central phenomenon" (Creswell 2002, p. 265). At this stage, I also began to code the data as a means of sorting it. Creswell identified coding as "the process of segmenting or labeling text to form descriptions and broad themes within the data" (p. 266). As I read over the transcripts, certain ideas began to reappear. When I felt I was reading something significant which could contribute to a theme or pattern, I would highlight it and make a note using one or two words beside the quote. For example, I came across several instances of students talking about the positive influence the teacher of an integrated program had. In these cases, I would write "teacher" beside the highlighted quote.

Once I had read through the transcripts several times looking for items of significance that might contribute to themes, I looked over my highlighted quotes with my notes beside them and kept track of the subject of the quote and the frequency with which that subject was mentioned on a separate piece of paper. This allowed me to see how often certain ideas were mentioned and by how many participants. At this point, some themes began to merge. For example, the ideas of building friendships and community were often mentioned and shared enough common ground to be grouped into a single theme. This process of amalgamating themes continued until I had identified the following six themes: (a) achievement, (b) community and social relationships, (c) engagement, (d) course structure, (e) teacher influence, and (f) impact on postsecondary education and career choices

As a part of the data analysis process, measures were also taken to ensure that any findings made had a high degree of validity. According to Creswell (2005), "Validating findings means that the researcher determines the accuracy or credibility of the findings through strategies such as member checking or triangulation" (p. 252). Member checking was employed in order to validate the findings of the study.

"Member checking is a process in which the researcher asks one or more of the participants in the study to check the accuracy of the account. The check involves taking the findings back to participants and asking them about the accuracy of the report" (Creswell, 2005, p. 252). Member checks were performed in this study via email once the transcriptions of interviews and data analysis were complete. I sent each participant a copy of the transcript of the interview they gave and asked them to respond and tell me whether they were happy with the information they gave and, if they would, to add detail, clarify, or remove any part of the transcription.

Ethical Considerations

"Two issues dominate recent guidelines of ethics in research with human subjects: informed consent and protection of subjects from harm" (Bogdan & Biklen, 1998, p. 43). I took a variety of steps to ensure that the above criteria were honoured. First, I gained clearance from the Research Ethics Board at Brock University. Before the interviews were conducted, all participants were given a letter outlining the purpose of the study and its general structure. Participants were also told that they would be able to withdraw from the study at any time and that they would not be forced to answer any questions that made them feel uncomfortable. Confidentiality was also guaranteed for all participants and the school board; this would be achieved through mutually agreed upon pseudonyms.

Limitations

The research question and the researcher's biases are a limitation in any study; as Miles and Huberman (1994) wrote: "what you find in any quest depends mostly on what you set out to find, and where you choose to look for it" (p. 155). I attempted to acknowledge and compensate for my own biases in every conceivable way using reflexivity (Creswell, 2005, p. 50), the neutral wording of my interview questions, and reinforcing to participants that my agenda was simply to learn and that all information was helpful and welcome. I also reflected on my biases, values, and assumptions. Yet, my biases may still have coloured the interpretation.

To use interviewing as the sole investigative technique in a study is also a limitation, but in-depth interviews suited the study well as a means to understand participants' experiences (Seidman, 2006, p. 9) and to understand the central phenomenon (Creswell, 2005, p. 204). The interview process can also become an issue when participants engage in "impression management": attempting to control how others view them (Miles & Huberman, 1994, p. 10). In this way, participants may choose their answers based on what they think the researcher wants to hear rather than choosing an answer that directly reflects their opinions and experience. Although I tried to eliminate this from happening, it may have influenced the study.

The small size of the sample limits the transferability of the study but is consistent with the type of qualitative research conducted. The study should provide insights and a deeper understanding of integrated curriculum and could help others design similar studies or challenge other curriculum integration designs.

Using purposive and snowball sampling rather than random sampling can bias a study's results. I tried to limit the extent by which the methods of sampling interfered with the study's credibility by seeking participants who had studied in an integrated program, but without qualifying the type of experience they had within the program. My hope was that I would discover as many perspectives as possible that would be more representative of the population of students who have participated in integrated programs.

Snowball sampling could have also biased the study in another way as the results were very positive overall. Participants who had positive experiences would likely refer me to interview friends with similar experiences. The participants in this study all volunteered to share their experiences with me and it is often the case that volunteers

In this study, there was also a gender imbalance in terms of the participants who were interviewed. I did not seek men or women specifically, but once I had completed 10 interviews, I found that only two of the participants were male compared to eight female participants.

The results of any study on curriculum integration are intrinsically difficult to generalize because integrated programs are unique and unstandardized (Drake, 2007). Still, most integrated programs share some fundamental elements and can learn and further develop their thinking based on the results of this study.

My experience as a researcher is a final limitation to this study as this has been the first formal study I have implemented. By working with a thesis committee and thoroughly researching protocol, I have tried to reduce the influence of my lack of experience on the results of the study.

Summary

The purpose of this qualitative study was to explore the experiences and perspectives of students who have participated in integrated programs in Ontario. In particular, it was designed to glean a deeper understanding of the impact of these programs on students. The results of this study will inform the creation and implementation of programs using integrated curriculum such that they can better meet the needs of students.

This chapter has detailed the research methods and design employed in this study. The processes of data collection and analysis, as well as my role as the researcher, have been described. Additionally, the ethical considerations related to the study and the potential limitations of the study were outlined including a discussion of the strategies used to address both topics. The next chapter will report the results of this study.

CHAPTER FOUR: RESULTS

The purpose of this study was to investigate the impact of participating in an integrated program at the secondary level on students' lives based on their postsecondary perceptions. In this chapter the experiences of participants will be explored as they relate to the themes that emerged from the data collected from the participant interviews.

I analysed the interview transcripts through the lens of the Know, Do, Be (KDB) framework in an effort to discover the commonalities between what participants learned to know, to do, and to be through their experiences participating in integrated programs. The overarching themes that emerged from this process were the following: (a) achievement, (b) community and social relationships, (c) engagement, (d) course structure, (e) teacher influence, and (f) impact on postsecondary education and career choices. Each theme relates to at least one part of the KDB, but often they relate to more than one as the Know, Do, and Be are related to one another (Drake et al., 2014). For the most part, the themes have been organized as they were presented by participants; they will be fully integrated into the KDB in the next chapter. The rest of this section will explore these themes through the words of the participants of this study.

Achievement

I sought to explore whether or not participants' academic achievements were impacted as a result of taking part in an integrated program. Participants were asked: Do you feel participating in an integrated program had an impact on your academic achievement? The responses from participants were mixed on the subject and ranged from five participants reporting no difference in academic achievement to one participant describing significant improvements in academic achievement. The other four

participants all reported some degree of marked improvement in their academic achievement. All but one of the participants (who reported that there was no change in her academic achievement) also qualified his or her answer praising the program for an element that contributed something of meaning to their education. For example, when asked if there was any difference in his academic performance between the integrated program and his regular secondary school courses, Jim said:

> I did real well in the course and everything but I'm not sure that it contributed too much academically. I think what I took from it, not that there wasn't an academic aspect to it, but it was a lot of the other stuff that I really took from it…that I found really useful.

He continued to explain that the courses that were offered by the program were not accepted by universities, and that was part of his reasoning for returning for a fifth year of secondary school. Jim also stated that the program helped expose him to an area of interest and develop skills that eventually led to his current career in the Department of Fisheries and Oceans. Mary made a similar comment to Jim when asked to compare her academic performance within the integrated program to her academic performance outside of it. While she stated that her performance was not influenced, she said:

> I certainly didn't notice any difference in the marks that I received. I was always receiving high marks and I knew exactly how that system worked in order to get high marks so that didn't necessarily change. The amount of learning I did and the amount of learning I retained was the biggest difference for me. Whereas most of high school and what I actually learned was a blur; I could recite most of

> what I learned in [the integrated program] because it was taught in so many different ways and because I internalized it. It was made valuable to me.

Mary elaborated that from her perception, the program had a far more profound effect on other students who had not had as much success as she had in the traditional secondary school setting:

> I wouldn't say that I necessarily learned more just by being [in the integrated program]. Whereas for other students, they went from feeling like they were learning absolutely nothing to learning everything. That wasn't my experience because I was able to navigate both systems. But that was because I knew how both systems worked.

Kevin reported a similar experience to Mary, achieving academic success throughout secondary school regardless of the course, but again he qualified his statement adding that the integrated program helped him in his postsecondary studies:

> I think already I was pretty studious. It would have helped in that just relating it to what I am doing now; because I was so interested - like I've always been interested in identifying trees or something like that. Now what I am studying I can study in class I can say "oh, I've seen this before." I've seen in the outdoors. I've had a hands-on experience with it.

Sally also reported that her grades were unaffected by her participation in an integrated program.

She also qualified her statement regarding grades by highlighting the skill development she achieved through the program and continued on to say: "I believe that

the work that I learned how to do in Creative Arts, I would never have learned in my home school".

Although, she cited that her memory was rough, Abby too reported no change in her academic achievement while participating in an integrated program. In Abby's case, she said that she did very well, but that the course focused on an area of passion that she regularly excelled in: "I excelled at that course… I can't remember grades. I know I did well in it because it was the Arts and I always did well in Arts." Josie, Penny, Brittney, Sarah, and Betty all reported that their grades improved to varying extents while they were in an integrated program. Betty reported that her marks in the integrated program represented a large improvement over her general performance. She said: "[my grades were] 10 times better. I was getting like averages like 85 in high school. In that program, I think, my average was like 97." Sarah also reported improving a full grade level during her integrated program, specifically citing improvement in one course in particular and attributing the improvement to the hands on nature of the course:

> I would say my exercise science marks were much better in the fact that it was all hands on. We were there working our muscles, learning when you do a biceps curl what muscle is at flexion, what's at extension and all of that. That really improved my grades in that sense. But I wouldn't say like tremendously. Like it took me say from a B to an A or a C to a B kind of thing.

Similarly to Sarah, Brittney felt her level of achievement was higher in the integrated program and attributed it again to the experiential nature of the course as well as to her enjoyment of the activities involved in the program.

Penny was different from the other participants regarding achievement. She felt that while her overall academic performance was consistent and that she was generally an "academically strong student," the integrated program helped her in a specific area of struggle. She reported that the integrated course gave her "focus and direction" and allowed her to have a success experience acquiring an English credit that had been a challenge during her regular secondary school program.

When describing her experience with school and the reasons she enrolled in an integrated program, Josie said:

> I was trying to find something different in school. I don't really react well to the classroom setting. I was always a D, C kid for a while. Like I would get Ds and Cs for most of my public school career and when I went into high school, I worked very hard but I could only really get Bs and Cs.

She went on to explain that participating in the integrated program connected her to a postsecondary path and gave her goals and direction. Josie felt that the result of discovering this postsecondary path was that she was able to focus on improving her grades; she reported receiving grades mainly in the A to B range while in the integrated program.

In summary, participants reported either no difference in their academic achievement or a positive change in their achievement.

Assessment

Given that achievement was discussed in the interviews, naturally so was assessment as this generally determines the achievement of students. I made a point of talking about assessment because I wanted to know if participants perceived a difference

between the assessments used in their regular courses versus those used in the integrated programs. This was particularly relevant given the somewhat positive correlation reported between participation in integrated programs and achievement. I did not receive much information on assessment and for that reason it was not given its own section, but it warranted mention as it was a question asked of each of the participants.

When asked about assessment, the majority of participants could not recall in any detail the assessments that were a part of their integrated program. The most detailed answer I received regarding assessment came from Josie:

> We did quite a few projects. We had a standard test as well. A few of them I think. I don't really remember the tests, which I guess means I wasn't stressed out about them. I think we also were also were observed doing things too. I think they watched us to perform certain hands on skills but I don't quite remember what all they did for testing.

Josie was not alone in struggling to remember any details regarding assessment. Jim said: "I'm having a hard time remembering to be honest. It's quite a while ago. I am sure we had tests but I can't specifically remember them right now." His response was typical of most of the participants in this study. All participants did report that traditional assignments were used at some point during their course, and qualified these assignments as tests, exams, quizzes, projects, and presentations. Mary also mentioned that in her course, journaling and observation were used for assessment purposes.

On the whole, participants did not report assessment as being dramatically different from their regular classes, if they recalled assessment at all.

Community and Social Relationships

Community and relationships (mostly peer relationships) were discussed in fair detail by a number of participants. I asked each of the participants: Do you feel participating in an integrated program had an impact on your social relationships? However, a large chunk of the data I gathered on this topic came in response to the first question I asked, which was: Can you tell me a story about your participation in integrated programs? Half of the participants mentioned friendships or community in some way in response to my first question.

Participants discussed that they were able to forge meaningful and lasting friendships and create community both within the programs and, in some cases, the broader community. This section will share details of the relationships that participants formed and the community experiences they shared.

Each of the 10 participants in this study reported that their experience in integrated programing created and fostered friendships to varying degrees, but a number cited that the programs facilitated development of really profound relationships. For example, Jim identified:

> some of my really best friends, I met through [the integrated program I took part in]. [John] who's my best friend – I was the best man at his wedding and all that. I knew him before but we really became friends in [the integrated program]. He actually met his wife in that focus program as well. She's a good friend too.

Kevin also commented that the program helped add depth to a friendship that had previously been more casual: "[My friend Jane and I] kind of knew each other before but through that Program we have a very, very close friendship now. It definitely started

through that program." Mary too commented on the character of the relationships formed within her integrated program, alluding to the structure of the program as a contributing factor:

> I think similar to other experiences, like expeditionary experiences or going and being with a group and experiencing challenges that really catalyzed different types of bonding. Yea, it was enormous for growing really authentic friendships and relationships which a lot of us felt like we really hadn't had in high school once we saw the contrast. And friendships that endure to this day.

Penny also attributed the "deeper connection" she felt with classmates in an integrated program in part to the integrated format;

> When you are working with the same 21, or however many it was, students every day - like normally in high school, you switch around a lot and you are with different people when you are with the same group of people you develop more of a relationship be it good or bad… We had a bit of a deeper connection with each other.

Josie, as well, had a similar comment: "we all were together in that one portable all day so you grew to really trust the people around you and I felt very open to share my opinions and ideas in that setting." Betty even mentioned that the program helped make the transition to university a little easier. She described that she had made friends within the integrated program she took part in who planned to go to the same university as her and that the group of friends planned to room together.

Beyond personal relationships, some participants discussed the communities that were created within integrated programs highlighting the differences between the

community dynamic in their regular secondary program and that of the integrated program. Mary was the most descriptive saying that the program "was all very purposeful. Really establishing community, working with the community and then challenging the community to be leaders within a larger community." Mary outlined that for her, the community she experienced was a result of shared challenge experiences that were well-debriefed by a teacher. She described their winter camping trip as "probably one of the most impactful community-creating experiences of the program" and attributed this to the trip pushing students beyond their comfort zones. For Mary,

> the unifying things were not always the really big high ropes things. They were also like, okay so we are all suffering through eating granola with varnish and things that we couldn't predict but they were facilitated in a way that made them special and important.

She also spoke of the approach to conflict resolution taken in the program as a catalyzing factor in terms of community creating:

> The community would sit together and have go around where the person with the rain stick had the option to speak until they had said everything they needed to say. Everyone was afforded that opportunity until the issue was resolved… which is enormously powerful for high school students to be completely heard and completely heard out.

Several participants described similar community experiences to Mary while Josie described the program as connecting her with the broader local community outside of the school:

> There was a section that was community based. I had not had a chance to go out and help my community like that before. Sometimes when you are younger, especially in high school, it's hard to make your own initiative on that or create your own initiative to go and help others. Some kids do it and they are exceptional, but other kids need a gateway or a venue or someone to say "Here, you can go out and help by doing this." So for me, I guess, it was that opening.

Betty expressed similar sentiments regarding the program connecting students with the broader community through art shows that were used to generate the students' grades and connect the school with the surrounding neighbourhood. She explained: "We did a lot of community shows which was really cool. I made so many connections with people doing art in the community." Many participants described networking opportunities that were offered through the integrated programs, and Betty's comment directly illustrated this component.

Engagement

Student engagement was a topic I deliberately sought to investigate given the number of researchers who had published on the subject (Apple Inc., 2009; Dutt-Doner & Wilmer, 2010; Elliott et al., 2001; Johnson et al., 2009, Kervin & Mantei, 2010; McMath et al., 2010; Ross & Hogaboan-Gray, 1996). During the interviews, I asked the question: Do you feel participating in an integrated program had an impact on your engagement in school activities? in order to get a sense of whether or not their engagement had been increased or decreased. This question confused many participants as they took "school activities" to mean extracurricular or other school-wide programs and events rather than learning activities within the integrated program they took part in. If participants asked

for clarification, I told them I was asking about their engagement in the integrated program, but if they simply answered the question in a different way than I had intended, I allowed them to do so without interfering. Regardless of whether or not participants answered the direct question about engagement the way I had hoped, the subject arose in some capacity, often in response to my first question (Can you tell me a story about your participation in integrated programs?). For example, Betty talked about how the program she participated in "didn't feel like school" and that "it was a really cool way to do school" in response to the first question of the interview. Jim and Sarah, on the other hand, addressed engagement when the specific question was asked. Jim said: "I know I did like going to school more and kind of hanging out with the other kids in the school when I was in the Program," and for Sarah: "I enjoyed the format and the structure and how it was taught that way versus than at a regular school." Overall, each of the participants reported that they enjoyed school more and were more engaged in their schoolwork while they were in an integrated program than in their regular secondary school courses although the level of enhancement in engagement did vary to some extent.

Betty reported that the engagement and commitment by students to their work in her program was so strong that students stayed at school to work well outside of school hours:

> I remember at the Gallery Show at the end of the year – students would stay till 6 at night working on our [projects] - like stay at school – stay at the gallery - just working on our [projects] - like coming on weekends to work.

There were a number of reasons students cited for their increased engagement, but most participants attributed it to their keen interest in the material being studied, or the social

environment created in the program. When I asked Brittney if her level of engagement in schoolwork was any different in the integrated program than her regular classes, she responded by saying:

> Of course you are [more interested than in your regular classes] because you are going out and going on like 12 day camp trips. You are just out with all your friends and you're having a good time. But it's also like you're getting marked for it but you are there with all your friends and enjoying the scenery, the time with everyone.

Penny was "more engaged because I enjoyed all of the topics that we talked about. Maybe not 100%, I guess I can't say that as an absolute. I was more interested in all the things that we were learning". Kevin also said of the program he participated in that

> It was a huge interest to me. The outdoors and that sort of thing… I've always been interested in ecology. These sorts of programs, where I am actually able go outside, it is just of like the best thing ever for me. I love doing it. It sort of guided me into what I love and what I want to study more.

Sally described the environment of her program positively by saying: "We were absolutely immersed. Floor-to-ceiling creative. There was music on every minute we were in there. It was a very creative environment." This comment seemed to summarize many participants' feeling that with integrated programs they were engaged in activities and subjects they were interested in while being surrounded by likeminded people who became their friends.

Penny went so far as to say that her program not only engaged her because of the content but that the subject matter helped her to succeed in an area of struggle:

> It also gave me focus in English because I struggled with English and because the content was content that I was interested in. Like, we read a Farley Mowat book so it was a bit more outdoor-based. I had just had terrible experience with English up until then and had like this wall I had put up and I didn't want to do grade 12 English but had to. It was a great way to get that credit.

Sarah attributed her increased engagement during her participation in an integrated program to the teaching methods employed in the program: "I'm a visual learner so getting out and doing things hands-on fits my learning style versus sitting in a classroom and just staring at a teacher for 75 minutes." Sarah elaborated on her engagement to say the program made school more enjoyable because within the programs (Sarah completed two) students were constantly engaged in activities or having discussions rather than sitting down in a desk.

Josie associated her increased engagement as follows:

> I suddenly felt like I had ideas I could express. I always tried to be active in the classroom. I really felt like I could really have conversations with people and that I had something that was worth saying. It was challenging my brain in a way that I was creating new thoughts. I can remember sitting there and talking to people and it wasn't a traditional setting where we were sitting at desks we were just sitting lounged out on bean bag chairs and in comfy chairs and in a circle.

She seemed to have attributed her increased engagement in school to both the environment created within the integrated programs and to the way the teacher facilitated the classroom.

Course Structure

When I was analyzing the data, I noticed that the quality of the relationships was often linked to the course structure. For example, Penny talked about working with the same "21, or however many, students everyday;" Mary indicated that the structure helped to "catalyze different types of bonding" and grow "authentic friendships;" and Josie emphasized trust as a product of the structure of the program. In the interviews, the participants were asked to discuss the structure of the integrated program they participated in, but course structure was brought up many times outside of the specific question. Many participants highlighted the differences between the structure of the integrated program and their regular secondary school experience. For example, Mary stated that "[the course] was very fluid and blended" and elaborated further to say:

> there was no ringing of the bell and now it's time for Phys Ed. There were times we would be aware of where something would fit within the curriculum and occasionally he would emphasize that but for the most part we were blissfully unaware of exactly how things fit in. It felt very seamlessly like we were getting all of those credits. We felt confident that everything was being covered but without knowing exactly how things fit also with a lot of obvious overlap of different subjects.

Jim made very similar comments highlighting how much he enjoyed the structure of the integrated course and associated the structure with heightened engagement on his part:

> The best part of the class was that it was a more unstructured environment. It wasn't really – you go in and sit down - and have a class on this and a class on that. It was a little more loose than that. As a result, I found for myself, I was a

> lot more interested in it than a more conventional class… It was not like, "Now we are going to learn this" or "We are going to learn that"…You knew what credits you were getting going in but there wasn't a clear division in class, when you were doing this and when you were doing that.

Kevin also described his integrated course as being quite flexible:

> It was pretty different day to day. There was never a set routine, I would say. I guess it was "what was the most important task for the day?" and that would be the highlight. There was a lot of teaching when it was optimal. They would try to fit in lessons as we were going and we were doing other things I believe.

In addition, both Betty and Sally discussed how the course they participated in felt very much like the real world and they were treated like colleagues rather than students. For Betty,

> It didn't feel like school… It was very like, if you needed to take a period off to collect yourself or get more inspired she would let you do that. If you needed to go home early, if you had to come in late she would be really flexible with that, with your hours. Even though it was a set school day, it didn't really seem like that so it was a really cool way to do school. It made me come to school early in the morning. The program started at 10:00. I always got there early at 8:30 because I was so eager to work.

Similarly, Sally described that

> I was really into the teacher saying, "Okay this is what we are going to do today." It was really interesting the way the course was laid out. It was very free flowing. The bell rang and 10:30 for the next class and no one ever got up to move. Your

> project moved throughout the whole day so if you wanted to work on the same project all day; you are absolutely entitled to do that. It was very much like the real world. The project was due on Thursday and you had until then to get it done. There was always ample time to finish all of them – the things you needed to do - but there was a lot more responsibility personally, on each person. I think it was really good, that they gave you all the tools and kind of said, "here you go."

Betty and Sally alluded to the fact that their courses were fairly hands-on in their approach by outlining that the course was based mainly on completing a series of projects. Sarah elaborated on this idea by observing that the structure of the course she took part in lent itself well to activity and experiential learning as opposed to traditional lecture-style classroom learning. Sarah commented: "I found with the [Outdoor Education integrated program] and even the [High Performance Athletics integrated program] we were constantly out doing something." She went on to say that the activities were all very purposeful: "If we're in the gym, yes we are working out but we are constantly being quizzed about what muscles are firing at this point or like the exercise science aspect of the course". Sarah enjoyed the class being structured so that learning and then reinforcement of learning could be facilitated through activities rather than lectures.

Participants consistently described the structure of the integrated programs as providing a foundation that supported their engaged in learning and facilitated the growth of relationships and community.

Teacher Influence

Half of the participants in this study discussed the positive impact of a teacher who ran the integrated program. It is also important to note that I did not ask a question about the teachers specifically during the course of the interviews.

My first question involved telling a story about a positive experience. Betty said: "It didn't feel like school. It was something where the teacher treated you almost like a colleague." Betty stated that in her program, while students had specific projects and deadlines, they had a great deal of choice in terms of how they wanted to organize their time. Penny also highlighted choice as being a highlight of the course she took part in; however, in this case, the choices the teacher gave the students were related to content:

> The teacher was great about asking for our feedback as well. She would give us options. So say we were studying geography, she would give us a lot of choice even with what content we wanted to learn about. And all of it would meet the curriculum guidelines, I am sure, but she gave us choice in the details we wanted to learn about.

In her interview, Mary went into great detail describing the influence that the teacher in her integrated program had on her and the entire group. She described the teacher by saying: "We had an incredibly competent leader and someone who could make mistakes and who was learning and experimenting along with us was so profound for us. Like it made such an enormous difference." Mary continued:

> I guess the richness of [the integrated program] was the way that [the teacher] was able to foster community and really look for those magical moments in the amidst

> of all the curriculum, in amidst all of the other bigger experiences that would catalyze community.

Furthermore, Mary stated:

> [The teacher] taught who he was and that had a huge impact. He was really able to engage students in what he was passionate about and introduce them to a lot new themes and a lot of new ways of being... He certainly wasn't trying to convert any one to his ways of thinking but was really trying to expose everyone to different possibilities.

Exposure to new ideas, interests, and possibilities was a common theme. Brittney said that the teacher of the integrated program she participated in "wanted me to do the course so badly that she did everything in her will to get me onto that course." Brittney also detailed that the course exposed her to a variety of outdoor activities that challenged her and broadened her horizons.

Jim had a similar experience; his teacher helped affirm his interest in a particular field: "[The teacher] was a kind of big inspiration to me. I really looked up to him. He helped solidify my love for back country camping and that type of thing." Jim went on to say that beyond exposing him to an area of interest, the teacher helped him discover a career path:

> You know Jim, I think you would probably be good at something in like wildlife law enforcement like park ranger or park warden something like that… being out in the back country." I kind of got thinking, "Yea that would be kind of cool." That's what I do now - I'm a Fishery Officer so it's kind of funny I hadn't

> specifically thought of that until he mentioned that. [The integrated program] did have a big impact on me.

Penny also got some direction in terms of postsecondary course of study from her teacher. The teacher was an alumnus of the university program that Penny ended up enrolling in; when Penny was struggling to determine a course of study that would be of interest to her, the teacher told her about a particular program that was related to the integrated program.

Impact on Postsecondary Education and Career Choices

One of the topics that the participants in this study spent the most time discussing in their interviews was the enduring impact the program had on their lives. I found this particularly interesting because while I asked questions about the long-term impact of participating in integrated programs and the skills they learned through the programs, I only asked one question that addressed postsecondary education and I did not ask a question relating to careers. The impact participating in an integrated program had on postsecondary education, careers, and life in general was discussed at length by most participants and in a variety of contexts.

The quality of the impacts participants described ranged from simply helping instil confidence to beginning to establish a career path. Each participant highlighted the enduring impact of participating in an integrated program and while many of the stories share common ground, there are important unique characteristics of each one. As a result, this section will take the time to discuss the responses from all 10 participants of the study.

The first group of participants all attributed their choice of postsecondary education at least in part to the integrated program in which they participated. Some of the participants also chose to pursue careers related to the integrated programs they took in secondary school.

For Mary, the integrated program helped guide her in the direction of her current career, although not directly. Mary works as a teacher and outdoor educator and the program she took was based in outdoor education. Mary said: "I am pursuing outdoor and environmental and experiential education as a career. [The integrated program] was absolutely foundational in that." Mary also highlighted the skills she learned through the integrated program and how she continues to apply many of them in her work and personal life:

> I learned skills in winter camping… just in terms of hard skills. Winter camping, canoe tripping, bread baking, snow shoeing. There is quite a vast number of hard skills that we learned. We also learned a lot of biking skills. Different things like tree ID and then also more soft skills – actual like facilitation of groups, communication and consensus building. A lot of teaching skills, like how to teach in a really hands on experiential way. A lot of the things I learned in [the integrated program] that was one of the first times I was exposed to teaching or facilitating in that way. It definitely is stuff I use pretty much on a daily basis in my work now.

In Mary's case, the impact participating in an integrated program had on her life can be directly witnessed on a day-to-day basis.

Jim essentially shared the story of how he became interested in his current career beginning with his participation in an integrated program. He described that the teacher had asked him what he wanted to do after secondary school and, while Jim had strong interests, he did not have much of a plan after secondary school. The teacher observed his skills and interests and suggested he look onto wildlife law enforcement or being a park ranger and that is the path Jim ended up following as he is currently employed as a Fishery Officer. Jim said that he was able to explore his interest in wildlife through the Co-op portion of the integrated program he participated in. Jim communicated that "[the] placement actually really helped me out" and described how exactly the Co-op program helped him secure summer employment with the Ministry of Natural Resources and solidified in his mind the career he was going to pursue.

Penny's story was very similar to Jim's in that the teacher in the integrated program helped open her eyes to a career pathway she had not previously considered. She described herself as being confused as to what to pursue after secondary school before participating in the integrated program:

> I was a student that in succeeded in sciences and they were pushing me towards going into sciences in university and not really thinking about any other options. At that time, I was thinking about going to school for paramedics and I was thinking about going to school for music and maybe just not going to school.

Penny reported that the program exposed her to a number of outdoor activities with which she had little or no previous experience. Penny described developing a passion for the outdoors as a result and the teacher of the integrated program was able to show her a university program that catered to her interests. In relation to her current job as a teacher,

Penny described using many of the skills she learned through the integrated program such as public speaking, leadership, group management, and conflict resolution:

> Where I work now a big part of what we work on with the kids is … it is not a therapeutic program, but therapy happens. We have individual meetings with kids and talk about ways to manage conflicts and ways to be respectful through managing conflicts. We also guide them to lead or facilitate different activities. I use it when I am teaching and also try to teach others to do that sort of thing as well.

It was clear from our interview that participating in integrated programing had a distinct role in helping Penny choose her postsecondary direction.

In Sarah's case, the integrated program helped her gain entrance and an athletic scholarship to an American university. In this case, it was not clear that her participation in integrated programs directly affected her day-to-day life, but it certainly had an impact on her choice of postsecondary direction as well as her ability to achieve the direction of her choice.

Betty described the program she took as helping her define her postsecondary pathway:

> going into the program I was really kind of confused on what path to take postsecondary. After doing that I really developed a keen sense for art. I really loved it and the following semester going back into high school just taking regular art class I did not have the same kind of appreciation for the class. It was different. The program catered to people who, like me, who really like art; like to study it. It was different than art class in high school.

Regarding the program's impact on her postsecondary education Betty also said,

> The whole program was for me to build up my portfolio to present to universities to apply to Art School…I think if I hadn't done that program, I definitely wouldn't have such a great chance for getting into the school that I got into.

Similarly to Sarah, the program helped Betty not only choose a pathway but helped her gain entrance to the university program of her choice.

For Kevin, it would seem that one of the major impacts the program had on him was to give him some unique experiences that gave him lasting memories. In answer to the first question to tell me a story about the program he said:

> I remember one time, I think it was a lay day in the French River trip that we did. I remember we had just gotten out of the French River and were on Georgian Bay. I remember taking a nap at one point. I was pretty tired. And getting woken up by Jason saying like, "Kevin. Kevin, you've got to come and see this." So we all go out, there is a like a forested area like a tree line between the rocks and the water there. And we all come out and a little bit in the distance there is this big black bear. Just sniffing. It was a pretty cool experience. It was the first time I had seen a bear. It was very exciting to see the bear. I think we eventually moved because of the bear. We didn't want to step on its toes or anything. I remember being in awe at how big this bear was. It was one of the most exciting moments on the trip.

Kevin also described the program as helping him to decide on a postsecondary course of study. While Kevin initially enrolled in a university program that was not related to the integrated program he participated in, he said the experience in the integrated program

helped him make the decision to change his major to incorporate a more ecological focus. He credited the program with helping him to learn not to "do something just because" and to "do what you are interested in." While at first the integrated program seemed to give Kevin some positive experiences, those experiences helped him re-evaluate his choice of university degree later on.

Josie detailed the following story regarding the impact the integrated program had on her education, career path, and personal life:

> [The program] gave me a boost forward in terms of meeting people and networking ahead of my peers in a field that I was interested in…I created an early network base with a community of people that are like minded. I've always been interested in the environment and by going into that program I was able to make some connections early. Such as I did a Co-op so I got a chance to meet people who could help me with a potential career later on as well as give me advice on different projects during my university career.

For Josie, the impact of participating in the integrated program was further reaching than helping her choose a postsecondary course. It also helped her to network and experience personal growth as she described that the program had helped her boost her confidence both academically and socially.

Like many of the other participants, Sally found that the integrated program she took part in helped focus her interest and make postsecondary choices as well as instilling confidence:

> I found that because this environment was so conducive and creative to help you along, I actually applied to universities in the States. I applied to many more in

> Canada. It was a really great challenge. Every time I go to Chicago, I always think, "I got accepted into the Chicago Art Institute. Yes!" Someone thought I had the ability to do this. I chose Sheridan. It was a great school and a really great challenge and it's done me really well professionally.

When Sally discussed her acceptance to the Chicago Art Institute and the role the integrated program played, she was noticeably excited, it was clear this experience meant a great deal to her.

Brittney and Abby did not pursue a postsecondary education or career related to the field of study in their integrated programs; however, both participants discussed other enduring impacts. While Brittney did not end up pursuing a career or postsecondary education related to the integrated program she took part in, she described the program as having an enduring impact in terms of her confidence. As a comment in reference to "roughing it" and the "whole outdoors thing" Brittney experienced through her integrated program, she said: "[the course] impacted me to the point where I didn't think I could do it and then in doing it and enjoying it and having probably the best end of the year of my career. It was just amazing." Brittney continued to say the "[the program] gave me confidence and that "[it] proved to me that I can do stuff walking into things not knowing anyone."

Abby described the integrated program she participated in as giving her postsecondary guidance, much like many of the other participants, but in her case the program exposed her to a field she believed she was interested in pursuing as a career and helped her come to the conclusion that she wanted to look at other options:

> I think it made me realize that graphic design wasn't the route I was going to take. For a long time, I thought that I was going to do graphic design. By taking that course and focusing more on graphic design I realized that that wasn't the type of art that I wanted to do. I realized I wouldn't make money doing that – doing any other kind of art… I was looking for something that I could do more with as a career than the Arts. So my career path changed as a result of learning that…I wanted to do oil painting. I wanted the freedom.

The integrated program, which focused on visual art, also helped Abby develop her skills that she uses today in her free time. On the whole, Abby described being happy that she was able to take the course and discover early that the career she had originally envisioned for herself was not a good fit for her.

Nine of 10 participants described that the integrated programs they took part in influenced their choice of postsecondary pathway. In one case, that choice was to choose a path different than the focus of the integrated program, but in the other eight cases, participants described being engaged in activities that inspired them to continue with those activities after secondary school. Some participants also described that the integrated programs helped to give them the ability to pursue the postsecondary direction of their choice.

Summary

In this chapter, the results of this study were reported. The themes that participants identified through their interviews were outlined and included: (a) achievement, (b) community and social relationships, (c) engagement, (d) course structure, (e) the influence of the teacher, and (f) the impact on postsecondary education

and career choices. In the next chapter, the meaning of the results will be discussed in reference to the research questions of this study and their relationship to the field of curriculum integration.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter, the conceptual framework will be revisited in order to address the research questions that guided this study. Specifically, what students learned to Know, Do, and Be as a result of participating in integrated programs will be discussed before drawing conclusions. Finally, a comparison of participants' experiences with Delors's (1996) four pillars of education and other literature concerning preparation of students for the 21st century will form the basis for recommendations for future explorations of integrated curriculum.

Discussion

This study investigated two questions: What is the impact of participating in integrated curriculum on students' lives? and How does the experience of participants compare to the mandated curriculum of integrated programs in Ontario? By using the conceptual framework and exploring existing literature to discuss what participants learned to Know, Do, and Be through participating in integrated programs, the answers to both research questions will emerge. A summary of the KDB used for this study had been included in Table 4 as a reference.

Delors (1996) painted a picture of what 21st century education should be and much of it is reflected through the experiences of the participants of this study. He wrote that "if it is to succeed in its tasks, education must be organized around four fundamental types of learning which, throughout a person's life, will in a way be the pillars of knowledge" (p. 86). The four pillars include "learning to know," "learning to do," "leaning to live together," and "learning to be." Delors described the pillars s forming a whole and that between pillars there were "many points of contact, intersection and

Table 4

The KDB

KNOW		**DO**	**BE**
Big Ideas	**Enduring Understandings**	Higher-order thinking	Information literate
Career Paths	Career opportunities are constantly evolving as are the paths to obtaining them	Interdisciplinary research	Collaborative team members
Interaction and Interdependence	Disciplines of knowledge are interconnected	Interdisciplinary problem solving	Independent, lifelong learners
Systems and Interactions	The ability to approach problems through multiple lenses can lead to innovative solutions	Systems thinking	Enterprising and flexible
	Investigating more than one approach to knowledge leads to deeper understanding	Critical and creative thinking	Employable in a dynamic economy
		Collaborative decision making	
		Team building	
		Information literacy	
		Technological literacy	

exchange" (p. 86). Upon closer examination of the four pillars, Delors's framework encompasses most of the elements of the other research explored through this thesis and lived through the KDB of participants of this study. Each element of the KDB experienced by participants will, therefore, be linked to Delors's pillars of education.

Know

The Know did not translate exactly the way I had anticipated. Participants generally described having good academic achievement within integrated programs and 8 out of 10 participants pursued careers related to the focus of the integrated programs. Despite these facts, participants did not spend much time discussing specific knowledge they gained, achievement, or assignments; in fact, most participants' memories were very vague in these areas. The knowledge that participants gained and retained centred on what was meaningful to them, both within the integrated program experience and moving forward in life.

The integrated programs created special meaning for participants and helped give many of them purpose. This is significant because, as Aikin (1942) said: "along with the urge for expression by doing, youth are seeking some foundation for purposeful living. Every study of adolescent concerns reveals youth's need to find meaning in life" (p. 73). According to Eakman (2013), meaningful experience is created through three avenues:

> First, meaningful activity appears to have qualities of experience that are clearly social in nature, such as a sense of contributing to or caring for others and enjoyable social interactions. Second, aspects of meaningful activity reflect ideas of motivation and purposive action such as perceived control, success in task

> completion, and goal progress, which are often associated with experiences of pleasure and satisfaction. Finally, personal values and beliefs appear to influence how individuals experience meaningful activity. (p. 101)

The factors the participants attributed to the success of integrated programs align almost perfectly with Eakman's definition of meaningful activity. Every participant identified positive social experiences contributing to their experience in some way. Perceived control, success in task completion, and goal progress were also discussed by many participants who often identified choice and/or a connection to the "real world" in their school activities as being one of the most powerful attributes of their integrated programs. It was also clear that each program appealed to the beliefs and values of the participants. Participants elected to enter the integrated programs and, in some cases, applications were necessary. They were drawn to these programs because they centred on pursuits participants deemed valuable.

In particular, many participants described their experiences as being more meaningful than their regular courses because they were connected to the real world in some way. Relevance and being connected to the real world is a key component of education in the 21st century. C21 Canada (2012) emphasized the importance of relevant curriculum while the Partnership for 21st Century Skills (2009) stated that education must "enable students to learn in relevant, real world 21st century contexts" (p. 9). Similarly, the Organization for Economic Co-operation and Development (2008) asserted that students need to learn to use knowledge in "real-world social and practical settings" (p. 2). Creating relevant curriculum that is connected to the real world and in which students are, as the Buck Institute for Education (2009) put it, "active not passive" and engaged in

their "hearts and minds" is a common theme in the literature (Apple Inc., 2009; Czerniak et al., 1999; Johnson et al., 2009; Meier, 1998).

According to Delors (1996), "learning to know" is "less a matter of acquiring itemized, codified information than of mastering the instruments of knowledge themselves, and it can be regarded as both a means and an end in life" (p. 86). He continued to say that

> As a means [the know] serves to enable each individual to understand at the very least enough about his or her environment to be able to live in dignity, to develop occupational skills and to communicate. As an end, its basis is the pleasure of understanding, knowing and discovering. (pp. 86-87)

Within Delors's construct of learning to know fits the idea of creating relevant curriculum grounded in real-world settings that is promoted by Apple Inc. (2009), Buck Institute for Education (2009), C21 Canada (2012), Czerniak et al. (1999), Johnson et al. (2009), Meier (1998), Organization for Economic Co-operation and Development (2008), and the Partnership for 21st Century Skills. Feeling that their education was relevant was also one of the central factors in creating the meaningful experiences participants described as being one of the enduring impacts of participating in integrated programs. Delors's (1996) suggestion of learning to know as an "end" also speaks to the promotion of life-long learning emphasized within the *Ontario Curriculum Grades 11 and 12: Interdisciplinary Studies* (MOE, 2002) document.

Do

Participants appeared to have learned a number of skills applicable to specific career paths given that 8 out of 10 of them were in the process of pursuing postsecondary

education or were established in a career that was related to the integrated programs. Alongside the skills related to specific career pursuits, participants reported on learning the interdisciplinary or 21st century skills of collaboration, social skills, and community building. In this way, the programs might be considered ahead of their time. Participants in this study took part in integrated programs between the early 2000s and 2010; the majority took part before 2005. Collaboration, social skills, and community building are themes that have begun to appear more and more in discussions about the future of education. Brown (2014) presented a discussion regarding the importance of "measuring beyond the 3 R's, and whether a school should be responsible for promoting health, creativity, citizenship, and social-emotional skills, let alone have its performance on these measured and reported to the public" (para. 9). Furthermore, People for Education (2014) contended, "the evidence is clear that for long-term success, students need more than foundational skills in literacy and numeracy" (para. 2). According to People for Education, modern schools must support "the development of good physical and mental health; strong social-emotional skills; creativity and innovation; engagement in democracy and citizenship; and provide positive school climates and quality learning environments" (para. 3). C21 Canada (2012), as well as Brusic and Shearer (2014), also promoted the importance of teaching communication and collaboration to 21st century learners while C21 Canada also included character as a key 21st century competency.

The Conference Board of Canada (2014) identified important "employability skills" for the 21st century including "communication, problem solving, positive attitudes and behaviors, adaptability, working with others, and science, technology and mathematics skills" (p. 1). Employability skills are "the critical skills you need in the

workplace-whether you are self-employed or working for others" (p. 1). The social skills, collaboration, and community building that were reinforced by the integrated programs are in many ways echoed by the employability skills identified by the Conference Board of Canada.

For Delors (1996), learning to Do is "to a great extent indissociable" (p. 88) from learning to Know. The factor that differentiates the two is that learning to Do is "more closely linked to the question of vocational training" (p. 88) and seeks to answer the question "how can children be taught to put what they have learned into practice and how can education be adapted to future work when it is impossible to foresee exactly how that work will evolve?" (p. 88).

To prepare students for life in the 21st century, education must be different from that which prepared students to participate in an economy based on industry and agriculture in the past. With the economy becoming more service-based, personal relationships between service provider and client are of the utmost importance. According to Delors (1996), the result is that

> employers are seeking competence, a mix, specific to each individual, of skill in the strict sense of the term, acquired through technical and vocational training, of social behaviour, of an aptitude for teamwork, and of initiative and a readiness to take risks. (p. 89)

Brusic and Shearer (2014), C21 Canada (2012), and the Conference Board of Canada (2014) echo much of Delors's proposition concerning preparing students to learn to do in the 21st century. They advocate teaching the skills of collaboration and communication as being fundamental in preparing students to participate in society and the economy of

the 21st century. The participants of this study learned the skills of collaboration, communication, and participating in community; as well, many credited the integrated programs with helping them establish a career path and to acquire the skills to pursue their chosen careers.

Be

Completing integrated programs appeared to have helped participants learn to be engaged community members and learners. This aligns well with Delors's (1996) idea that education should foster individual development: "individual development, which begins at birth and continues throughout life, is a dialectical process which starts with knowing oneself and then opens out to relationships with others" (p. 95). Integrated programs helped participants understand community, how to participate in community, and how to help create it.

The Organization for Economic Co-operation and Development (OECD, 2008) said of students: "they need to learn integrated and usable knowledge, rather than the sets of compartmentalised and de-contextualised facts. They need to be able to take responsibility for their own continuing, life-long learning" (p. 1). The integrated programs seemed to have helped participants become life-long learners, with respect to their career interests. Participants' descriptions of the integrated programs align with the OECD's notion that contextualized knowledge helps facilitate life-long learning. Many participants described their interest in school activities being significantly heightened within the integrated programs because of the relevant context of learning, the practical skills they acquired, and the successes they experienced.

The individual teachers of the integrated programs may have had an impact on the Be that manifested through the participants. Throughout the course of a person's education, most people meet a teacher they relate to and who inspires them. A number of participants clearly articulated meaning from their integrated program, in part, through the teacher who administered the program. Penny, Jim, and Mary all mentioned their teachers during their interview and made it clear that they looked to them as role models. All three are pursuing careers directly related to the focus of the integrated program they took part in and while Mary gave partial credit to her teacher for helping her along her path, both Penny and Jim described the teachers' role as instrumental in beginning their careers.

I revisited the Eight-Year Study and found that Aikin (1942) recommended that "some way must be found by which each pupil should be well known by at least one teacher" (p. 37). As I delved further into the literature, I also discovered a study by Roorda, Koomen, Split, and Oort (2011) whose "analysis revealed positive associations between positive [teacher-student relationships] and both engagement and achievement, and negative associations between negative relationships and both engagement and achievement" (p. 515). Furthermore, Siegle, Rubenstein, and Mitchell (2014) found that students most often attributed their interest and motivation in high school to their interactions with their teachers.

Teachers can have a significant positive impact on a student's educational experience; they can also negatively impact students. In a study of teacher-student relationships over the course of elementary school, students who did not perform to their potential that "the degree of underachievement manifested after a six-year period

coincided with the length and timing that children were exposed to relational stress and lacked social support from primary school teachers" (Spilt, Hughes, Wu, & Kwok, 2012, p. 1192).

Given the research by Aikin (1942), Roorda et al. (2011), Siegle et al. (2014) and Spilt et al. (2012), it follows that the teacher could have had a significant role in what participants learned to Be as a result of participating in integrated programs.

Learning to live together and learning to live with others in many ways appears to go hand in hand with many of the 21st century skills involved in learning to Do. Delors (1996) stated that "by developing an understanding of other people and an appreciation of interdependence - carrying out joint projects and learning to manage conflicts - in a spirit of respect for the values of pluralism, mutual understanding and peace" (p. 97). This relates strongly to what participants learned to Be: engaged community members.

If the first three pillars Delors (1996) identified are satisfied, they culminated with learning to Be that can be described as "individual development, which begins at birth and continues throughout life" (p. 95). Learning to Be "is a dialectical process which starts with knowing oneself and then opens out to relationships with others" (p. 95). Delors concluded that "education as a means to the end of a successful working life is thus a very individualized process and at the same time a process of constructing social interaction" (p. 95). The experiences of participants aligned strongly with the first three of Delors's pillars suggesting they also "learned to be" and that the programs provided grounding for preparing student to meet the challenges of the 21st century.

Conclusions and Recommendations

Given that Delors's (1996) four pillars, learning to know, learning to do, learning to live together, and learning to be, accommodate both the literature pertaining to preparing students for the 21st century and the experiences of the participants in this study, it is recommended that further research be completed investigating the use of integrated programs as a foundation for 21st century education. Much of the research I explored focused on investigating student performance within integrated programs and reporting academic achievement was the most common indicator discussed.

When it comes to academic achievement, "…students in integrated programs demonstrate academic performance equal to, or better than, students in discipline-based programs" (Drake & Reid, 2010, p. 1). My study also came to this conclusion; however, in the interviews, participants did not often discuss grades and, when asked, they tended to provide short, matter of fact responses; the bulk of my findings are related to other topics concerning curriculum integration.

Indeed, the foundation for 21st century education needs to involve much more than academic performance. People for Education (2014) indicated that in general, there exists a lack of information regarding school success in domains outside of achievement. They stated that "this leaves large gaps in our understanding of how well schools are meeting both the broader needs of students and the expectations of policy-makers, parents, and the public" (para. 2). Exploring the impact of integrated curriculum on students more broadly might aid in minimizing the "gaps" and help to better gage the suitability of integrated curriculum as a foundation for preparing students to succeed in the 21st century world. For example, investigating the capacity of integrated programs

for teaching the employability skills identified by the Conference Board of Canada (2014) could be of value. Employability skills include proficiencies, such as communication, working with others, and adaptability, that were identified as key employability skills for the 21st century.

Having personal experience both teaching and learning through the use of integrated curriculum, I believe that the richness of integration lies in areas such as the social environment that it can help create and the sense of purpose it can give to students – improved grades are sometimes the products of these things.

Participants in this study experienced a variety of interesting impacts relating to the KDB of the integrated programs they took part in. Overall, with respect to the Know, participants learned what was meaningful to them through a relevant school experience that they felt was directly connected to the real world. This experience was supported by feelings of success within the integrated programs and positive social interactions. Participants also leaned 21st century skills, some of which related to their career pursuits; however, the most striking were the social skills of collaboration and community building they developed through the integrated programs. Through the facilitation of some inspirational teachers, participants learned to Be engaged community members and life-long learners.

When comparing the lived experience of participants to the KDB derived from *Ontario Curriculum Grades 11 and 12: Interdisciplinary Studies* (MOE, 2002) document, some elements are easier to demonstrate than others. The parts of the Know, Do, and Be relating to understanding career paths and opportunities and learning to be employable match participants' experiences closely as 8f of 10 participants were

pursuing or established in a career related to the integrated program they completed. Through the interviews, it was also apparent that participants learned the skills of team building and collaborative decision making and, consequently, learned to be collaborative team members. It also appeared that participants tended to engage in life-long learning as it pertained to the area of interest that was sparked or reinforced through the integrated programs.

While several other elements of the KDB were present in the interviews, their appearances were not pervasive enough to draw conclusions. More research would be required to investigate each element of the KDB; furthermore, it was difficult to collect information regarding each individual element of the KDB within a qualitative interview that used only open-ended questions. In order to achieve this, a quantitative survey would likely be required. Using this method did, however, lead to interesting discoveries in terms of identifying broad themes regarding what students actually learned to Know, Do, and Be.

For the participants in this study, completing an integrated program aligned closely with Delors's (1996) conception of what 21st century education should be. His vision also accommodates recommendations made by many other publications depicting the landscape of 21st century education. In this way, while the lived KDB within integrated programs was both meaningful to participants and in relative alignment with the mandated curriculum expectations, integrated programs showed in this study the potential to form a strong foundation for preparing students to meet the challenges of the 21st century.

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Appendix A

Identifying the Know

KNOW		
Excerpt from *Interdisciplinary Studies*	**Big Idea**	**Enduring Understanding**
Develop a rich understanding of existing and potential personal and career opportunities (p. 5)	Career Paths	Career opportunities are constantly evolving as are the paths to obtaining them
Establish links among disciplines that will extend their knowledge and ability to solve problems beyond the scope of the individual disciplines (p. 10)	Interaction and Interdependence Systems and Interactions	Disciplines of knowledge are interconnected The ability to approach problems through multiple lenses can lead to innovative solutions
Investigate the skills, knowledge, and structures of [the] disciplines, as well as foundational skills and knowledge about the methods and approaches of interdisciplinary studies…[in order to] achieve a deeper understanding of issues (p. 10)	Interaction and Interdependence Systems and Interactions	Disciplines of knowledge are interconnected Investigating more than one approach to knowledge leads to deeper understanding

Appendix B

21st Century Skills

21st Century Skill	Specific Skills Involved
Communication	Reading, writing, speaking, listening (with a variety of "texts")
Higher-order thinking	Problem solving, reasoning, critical thinking, research, inquiry skills, integrative thinking, creative thinking
Design and construction	Creative thinking, combining information in innovative ways, application of imaginative planning
Disciplinary literacies	Numeracy, scientific, historical, geographical, arts, movement, health, financial
New Literacies	Technological, media, critical, environmental, financial, visual, movement

Drake et al. (2014, p. 47)

Appendix C

Identifying the Do

DO		
Excerpt from *Interdisciplinary Studies*	**21st Century Skills**	**Specific Skills**
Analyse and evaluate complex information from a wide range of print, media, electronic, and human resources (p. 5)	Communication	Reading, writing, speaking, listening
	Higher-order thinking	Reasoning, critical thinking, research, inquiry skills, integrative thinking
	Disciplinary literacies	Numeracy, scientific, historical, geographical, arts, movement, health, financial
	New literacies	Technological, media, critical, environmental, financial, visual, movement
Plan and work both independently and collaboratively (p. 5)	Communication	Speaking, listening
	Higher-order thinking	Problem solving, reasoning, critical thinking, research, inquiry skills, integrative thinking, creative thinking
Apply established and new technologies appropriately and effectively (p. 5)	Higher-order thinking	Problem solving, reasoning, critical thinking, research
	New Literacies	Technological
Use inquiry and research methods from diverse disciplines to identify problems and to research solutions beyond the scope of a single discipline (p. 5)	Higher-order thinking	Problem solving, reasoning, critical thinking, research, inquiry skills, integrative thinking, creative thinking
	Design and construction	Creative thinking, combining information in innovative ways, application of imaginative planning
	Disciplinary literacies	Numeracy, scientific, historical, geographical, arts, movement, health,

		financial
Develop the ability to view issues from multiple perspectives to challenge their assumptions and deepen their understanding (p. 5)	Higher-order thinking	Reasoning, critical thinking, integrative thinking, creative thinking
	New literacies	Technological, media, critical, environmental, financial, visual, movement
Use higher-level critical- and creative-thinking skills to synthesize methodologies and insights from a variety of disciplines and to implement innovative solutions (p. 5)	Higher-order thinking	Problem solving, reasoning, critical thinking, research, inquiry skills, integrative thinking, creative thinking
	Design and construction	Creative thinking, combining information in innovative ways, application of imaginative planning
	Disciplinary literacies	Numeracy, scientific, historical, geographical, arts, movement, health, financial
	New literacies	Technological, media, critical, environmental, financial, visual, movement
Systems thinking (p. 4)	Higher-order thinking	Inquiry skills, integrative thinking, creative thinking
Skills of effective team building, leadership, and collaborative decision making (p. 5)	Communication	Speaking, listening
	Higher-order thinking	Problem solving, reasoning, critical thinking
Information literacy (p.4)	Higher-order thinking	Inquiry skills, integrative thinking, creative thinking
Assess and value their own thinking, imagination, and ingenuity in decision-making situations (p. 5)	Higher-order thinking	Problem solving, reasoning, critical thinking, inquiry skills

Appendix D

Identifying the Be

BE
Information literate (p. 4) Independent, lifelong learners (p. 5) Collaborative team members* (p. 5) Enterprising and flexible (p. 5) Employable in a dynamic economy* (p. 4)

Appendix E

Interview Guide

The questions that were used in the interviewsfor this study have been included bellow and are listed numerically in the order they were asked. The bullet points underneath the questions indicate follow-up questions that were asked if deemed necessary during the interview.

Student Interviews

1. Tell me a story about your participation in integrated programs?
    - How many integrated programs have you participated in?

2. Can you describe the structure of the integrated course you participated in?
    - How did the classroom operated day to day?
    - Were you aware of different subject areas or were they blended into each other?
    - What sorts of assessments were used? Were they integrated or subject-based?
    - Was the grading straightforward or was there some confusion around what material belonged to what subject area?

3. Do you feel your participation in integrated programs has impacted your life in any way that would be different if you had been in a traditional program?
    - Did you learn any skills within the program that you still use today?

- Do you feel participating in an integrated program had an impact on your academic achievement?
- Do you feel participating in an integrated program had an impact on your engagement in school activities?
- Do you feel participating in an integrated program had an impact on your social relationships?
- Do you feel participating in an integrated program had an impact on your choices in terms of postsecondary education?